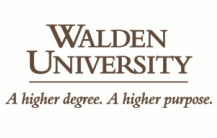

2018

Intimate Partner Violence and Posttraumatic Stress Disorder Symptoms Among College Women

Crystal Bowler
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This is to certify that the doctoral study by

Crystal Bowler

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2018

Abstract

Intimate Partner Violence and Posttraumatic Stress Disorder Symptoms Among College Women

by

Crystal Bowler

MHA/Informatics, University of Phoenix, 2013

BS, University of South Alabama, 2009

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Public Health

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Abstract

Approximately 35% of women in the United States experience intimate partner violence (IPV). IPV could be linked to symptoms of posttraumatic stress disorder (PTSD) that result in long-term mental health issues. Public health professionals, college counselors, and educators require information to assist in identifying college-age women who may be affected by IPV. The purpose of the study was to explore the association between the occurrence of symptoms of PTSD and IPV among college-aged women. The sociocological model was the theoretical framework for the study. A total of 199 cases were selected from National Intimate Partner & Sexual Violence Survey dataset for analysis. Data were analyzed using chi-square analysis and Welch's *t* test. The results of the study indicated significant association in the relationships between PTSD symptoms and IPV, which displayed $p < .001$, and significant association between PTSD symptoms and socioeconomic status, which displayed $p = .026$. The results also indicated that age ($p = .313$), ethnicity ($p = .178$), social support, and education ($p = .079$). have no significant relationship with PTSD symptoms and IPV among college-aged women. The potential positive social impact of this study is that findings show predictive factors that may have influenced a type of behavior as it relates to IPV, which could create and improve IPV prevention programs for college women, college educators, college counselors, local authorities, and health care workers. Providing focused attention on the education of these individuals could assist in early detection, which could reduce the potential for IPV/PTSD symptoms to occur among college-aged women.

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Dedication

This dissertation is dedicated to my mother Catherine Price and my late father Lenard Price who has deceased in 2007. My mom has and still supports anything I have every thought of attempting and has stood by me and encouraged me so that I can obtain anything I put my mind to and to continue to have faith in everything I do and it will come to past. My dad also instilled in me that education is important and was not an option in our home and for that I am very thankful. My two sisters both Lawande and Zipporah, you two encourage me all the time to keep going and don't stop and I appreciate you both for that. I am also dedicating this to my other family members and close friends who have provided me with words or encouragement or that extra push when I did not feel like this was possible. I am grateful to my colleagues both Monique Aguirre and Opokua Yasa Obei whom we have leaned on each other throughout this entire process through the good and the bad. I am most grateful to all who have had even the smallest way in the completion and success of this dissertation.

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Section 1 – Foundation of the Study and Literature Review

Introduction

Intimate Partner Violence (IPV) or *domestic violence* is one of the most common types of violence that occurs to women throughout the world (Bureau of Justice, 2015).Violence among women can happen at any age; however, IPV is violence ensued upon the victim by their significant other (Centers for Disease Control and Prevention [CDC], 2016). IPV affects all types of sexual orientation. CDC, 2016 showed that women of any sexual orientation are affected by this type of violence. CDC study revealed that 35% of women of heterosexual status were affected, and 44% of women who chose a lesbian lifestyle were also affected (CDC, 2010). This has been an issue especially affecting women aged 15-24 years. However, the researcher will focus on college aged women between the ages of 18-24 years. In this study I will provide insight about the issue and how it affects the target group and what changes can be made to help decrease prevalence among this group.

Problem Statement

Violence generated against women and children in the United States is problematic. According to CDC (2016), about 10.3 million women in the United States have experienced some form of IPV. IPV can be described as physical, sexual, stalking, or physical aggression toward a person by their partner or significant other (CDC, 2015). IPV is not only directed toward women but also toward men. Violence against women in

the United States has been described in various ways such as unwanted pregnancies, unwanted abortions, and forced sexual acts by their partner (Rodriguez et al., 2008). The other partner can sometimes use intimate partner violence as a means of control (Coker, 2005).

Approximately 94% of the females who experienced this type of violence were between the ages of 16-19 years and 70% were between the ages of 20-24 years (CDC, 2014). These outcomes of partner violence are often described as post-traumatic stress Disorder (PTSD), (Rodriguez et al., 2008). The researcher examined the association between the characteristics of IPV and PTSD among college aged women who are students. Several researchers have proposed that lack of education and resources can be a driving force for why IPV is tolerated by the victims (Rodriguez et al., 2008). The researcher examined the determinant conditions for predicting PTSD among college-aged women experiencing IPV, (Rodriguez et al., 2008). Some women may experience PTSD because of IPV, while others may not. Researchers have proposed that the violence that occurs to women from their partners can cause mental health issues related to things such as depression, personality disorders, and PTSD (Kamimura et al., 2016). The gap identified from the preliminary review of peer literature related to this topic was the need for more research and discussion to take place about the mental health issue such as PTSD and how it affects women, who experience intimate partner violence. I explored the characteristics of Post-Traumatic Stress Disorder among women who had experienced IPV, with the goal of adding to the body of knowledge regarding this problem.

Purpose of the Study

In this study I yielded important information about the effects of college-aged women who experienced IPV and went on to develop PTSD symptoms. The purpose of the study was to explore, explain, and understand the relationship between the characteristics of IPV and PTSD symptoms that may occur as a result of IPV among college-aged women. The potential positive social change impact of the study was to offer early preventive intervention resources to help mental health, law enforcement, and public health workers identify victims of IPV who might suffer PTSD symptoms. There was also a need to provide education about IPV to reduce the number of mental anguish that may occur among this group (Campbell, 2002). College-aged women who feel they have mental support from advocates who understand their way of living and specific factors that may contribute to participating may be able to overcome the sociocultural barriers that may contribute to these violent relationships. Women who may have felt as though they had no way out may have felt obligated to be bullied or coerced into violent situations based on their ethnicity and this could have lead to lifelong effects on their psyche (Garcia-Moreno & Reicher-Rossler, 2013). In addition public health officials may consider developing and implementing programs that focus on the mental health of affected college women.

Research Questions and Hypothesis

The research questions for this study are:

Research Question 1: What is the association between intimate partner violence and post-traumatic stress disorder among college-aged women?

H_o1: There is no association between Intimate Partner Violence and Post-Traumatic Stress Disorder among college aged women.

$H_1 1$: There is an association between Intimate Partner Violence and Post-Traumatic Stress Disorder among college aged women.

Research Question 2: What is the association between age as a predicting factor of the occurrences of Post-Traumatic Stress Disorder symptoms among college women who have experienced Intimate Partner Violence?

H_o1: There is no association between age and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

$H_1 1$: There is an association between age and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

Research Question 3: What is the association between socioeconomic statuses as a predicting factor of the occurrences of Post-Traumatic Stress Disorder symptoms among college women who have experienced Intimate Partner Violence?

H_o1: There is no association between socioeconomic status and Post-Traumatic Stress Disorder among college women who have experienced IPV.

$H_1$1: There is an association between socioeconomic status and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence .

Research Question 4: What is the association between ethnicity as a predicting factor of the occurrence of Post-Traumatic Stress Disorder and college women who have experienced Intimate Partner Violence?

H_o1: There is no association between ethnicity might not be a predictor of Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

$H_1$1: There is an association between ethnicity and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

Research Question 5: What is the association between social support as a predicting factor of the occurrence of Post-Traumatic Stress Disorder and college women who have experienced Intimate Partner Violence?

H_o1: There is no association between social support and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

$H_1$1: There is an association between social support and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

Research Question 6: What is the association between education level as a predicting factor of the occurrence of Post-Traumatic Stress Disorder and college women who have experienced Intimate Partner Violence?

H_o1: There is no association between education level and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

$H_1 1$: There is an association between education level and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence

Theoretical Framework

The socio-ecological model was used to help understand the findings. The socio-ecological model is a model that focuses on providing an understanding on both environmental and personal factors that may contribute to a behavior (CDC, 2015). The socio-ecological theory is comprised of four levels that can provide more support as to why this theory was the best selection (CDC, 2015). These levels include an individual level, relationship level, community level, and a societal level. All four levels help to identify the effects of IPV, attitudes, social norms and behaviors which can help decrease the number of individuals affected by PTSD. By using the socio-ecological theory, one might be able to better understand the relationship between IPV, sociocultural factors and PTSD. According to (Little & Kaufman Kantor, 2002), the Socio-ecological model has been recognized nationally by the National Research Council to address issues such as IPV, focusing on the cause and consequences associated with the issue.

Community factors such as low socioeconomic status, high crime rates, family support, and upbringing can be attributed to many of the IPV relationships in the United States (Little & Kaufman Kantor, 2002). The socio-ecological theory focuses on prevention of violence on every level by not only looking at the victim, but also factors

that may have lead them to be victimized which is this case for these women. One study demonstrated that in order to identify the characteristics and risk factors related to intimate partner violence, models such as the socio-ecological model, resource theory, and exchange/social control theory would be the best fit (Lawson, 2012). However, Lawson, (2012), describes how the socio-ecological model helps to identify more with the individual and their environment, and relationships and how these things influence behavior.

Nature of Study

The study was quantitative with a correlation analysis. The quantitative study approach allowed me to determine what relationship might have existed between characteristics of college women who experience IPV and PTSD symptoms. A quantitative research approach is a method in which data has been gathered and has a set of structured answers that can assist in the research process (Creswell, 2014). Since I was focusing on determining a relationship between my independent and dependent variable at a specific time, a cross sectional approach.

The independent variables for my proposed research study were the characteristics that may influence, affect, or be associated with the dependent variable, which is PTSD symptoms among college aged women who may have experienced Intimate Partner Violence For Research Question 2-6, the independent variables were demographic factors, age, socioeconomic status, ethnicity, social support, and education level. While my dependent variable for research question numbers two through seven is

PTSD symptoms among college aged women who have experienced IPV. For Research Question 2, the independent variables were demographic factors and the dependent variable was PTSD symptoms among college aged women who have experienced Intimate Partner Violence For my second research question, the independent variable was selected demographic characteristics. The demographic factors were identified individually in questions three, four, five, six, and seven. In the third research questions the independent variable is age and will focus on age ranging from 18-24 years and the dependent variable is the occurrence of PTSD symptoms among college women who have experienced Intimate Partner Violence The independent variable for my fourth research question was socioeconomic status, which focused on if the individual may be well off financially or live in poverty and my dependent variable is the occurrence of Post-Traumatic Stress Disorder among this group. The independent variable for my Research Question 5 was ethnicity, which focused on the individual's ethnic background, while the dependent variable for the 5th question focused on the occurrence of PTSD symptoms among college age women who have experienced intimate partner violence. The independent variable for my Research Question 6 was social support, which focused on any social support systems the individual may or may not have, while the dependent variable is the occurrence of PTSD symptoms among the college aged women affected by IPV. The independent variable for my seventh research question is education level, which will focus on where the women are in their education levels in college, while the dependent variable will be the occurrence of PTSD. My working hypothesis is that the

characteristics of women victims of IPV who end up experiencing PTSD and those who do not may differ. If this is true, then there may be predictors for PTSD symptoms among these women. This study will help to identify those factors. A correlation approach was conducted for this study and archived data was abstracted from National Intimate Partner Sexual Violence Survey database. This database was described in more detail in section two. The data was taken from the NISVS database which was located the CDC website. The data will be analyzed using SPSS.

The study used a correlation approach because the two selected variables were correlated. A correlation study approach determined whether there was an increase or decrease in one variable as compared with another. The data are obtained from an archived database, which had more information regarding such found in section two.

Literature Search Strategy

My literature search was conducted through various online searches and sources. The literature was collected from peer-reviewed journals. The collected literature was abstracted from learning sites such as Waldenu.edu, Google Scholar, EBSCO*host*, ProQuest, Medline, CINAHL, and Pub Med and statistical facts from sites such as Centers for Disease Control (CDC), and National Institute for Health (NIH). The peer-reviewed journal articles that were collected were written within the last 6-7 years.

I used the following terms to locate these research articles was IPV, Domestic Violence, Post-Traumatic Stress Disorder, and "symptoms" of PTSD. In using these terms, more than 150 articles resulted. I have reviewed 20 of those articles as their topics

were closely related to the research that has been proposed to be studied. The majority of the articles that were found to be of importance discussed intimate partner violence and how it affects mental health. Many of the studies used female participants only, while others used both males and females of all ages. The studies concluded that more research pertaining to PTSD needed to be conducted.

Literature Review

Intimate Partner Violence

IPV is an issue that has been ongoing for decades. IPV is not a disease, yet it is an issue that affects the public health of millions of women worldwide (CDC, 2015). The cost of treating injuries or issues related to Intimate Partner Violence in the United States can be very costly to the individual and those that support them (US Dept. of Human Services, 2003, p. 27). Intimate Partner Violence can be defined in many terms such as physical abuse, psychological violence, sexual violence, verbal abuse, and controlling behaviors imposed by an intimate partner of the same or opposite sex (Salcioglu, Urhan, Pirincciglu, & Aydin, 2017). IPV is preventable and recovery can be a difficult task for the women who have been subjected to it. According to (Coker et. al, 2005), women who have been affected by IPV can suffer from psychological trauma that may affect how the individual functions on a day-to-day basis.

Numerous studies have focused on intimate partner violence and how it affects women. However, these studies have primarily focused on the physical and sexual violence among females of all ages and not on PTSD symptoms as an adverse outcome of

IPV, (Kamimura et al., 2016). Other researchers have focused on factors such as marital status, violence as a child, attitudes, and perceptions of the victims (Kamimura et al., 2016).

Post-Traumatic Stress Disorder

PTSD symptoms can be defined as a developed mental health condition can be developed after a traumatic experience has occurred (NIH, 2016). PTSD symptoms can include withdrawal from family, feeling threatened, having outbursts, easily startled, and etc. (NIH, 2016). There are many determinant conditions that can be associated with PTSD symptoms, and this study will contribute to filling this gap in the knowledge base. Selected articles relating to IPV, something that can affect the psyche of college aged women and understanding how it can affect mental status. Kamimura et al., (2016) studied IPV victimization and perpetration. Researchers found that college age women who were victimized were more likely to deal with mental health issues such as personality disorders, etc. They concluded that further research regarding IPV and mental health issues such as PTSD, depression, and borderline personality traits should be conducted.

Hirth and Berenson (2012) determined that there was an association between trauma and depressive symptoms among young African American women more so than young Caucasian women who experienced IPV. Hirth and Berenson reported that further evaluation was needed to determine if major depressive disorders such as PTSD may be a factor among both African American and Caucasian women. Hirth and Berenson

concluded that race played a factor in the types of depressive symptoms that developed. Kamimura et al.,(2016) evaluated an association between IPV and depression among male and female college students. Kamimura et al. (2016) stated there was a link between mental health issues such as depression had not been well examined Kamimura et al., (2016) utilized both male and female participants who were both victims and abusers. The study did include substance abuse among those who were both victimized and the abuser and depression was no longer a factor for this study. The researchers suggested that depression interventions should be developed for female college students, and that substance abuse plays a major role in depression among this group.

Dillon, Hussain, Loxton, and Rahman (2012) conducted a literature review on 75 studies related to IPV, both quantitative and qualitative. Dillon et al. reviewed literature from 20016-2012. The review revealed that there was come correlation between IPV in women and altered physical and mental health. IPV was associated with things such as chronic pain, increased STDs, sleep disorders, anxiety, and more all surrounding both sexual abuse and physical violence by their partner. The literature revealed possible interventions and further research that needed to be discussed.

Prevalence of Intimate Partner Violence among College Women

According to the National Violence against Women Survey (NVAWS, 2015) the rate of Intimate Partner Violence is 3.4 women per 1000, which equals to about 4 million women per year (NVAWS, 2015). More than 53% of college-aged women have expressed that they have experienced intimate partner violence by their boyfriend of ex-

boyfriend (US. Dept of Justice, 2015). Women aged 18-24 years, who had no prior mental health issues but was involved in Intimate Partner Violent relationships in comparison to women with not involved in Intimate Partner Violence relationships but were predisposed with anxiety or depressive disorders had a higher chance of developing Post-Traumatic Stress Disorder than those who were not involved in an IPV relationship (Salcioglu, Urhan, Pirinccioglu, Aydin, 2017). Statistically more than 53% of women identified in a 2011 survey conducted by the CDC were involved in relationships in which some type of violence took place by an Intimate Partner before the age of 25 years (CDC, 2015). Of those included in that survey, more than 30% of those individuals had experienced IPV for the first time between the ages of 18-24 (CDC, 2015). Most of the college aged women who are involved in these types of relationships know who their perpetrators are may experience one or sometimes all types of IPV.

According to the Bureau of Justice Statistics (2005), the number of IPV cases has slightly decreased but that may be due to less cases being reported. When researching the number of IPV cases being reported in the past, college students made up about 31% of that number, which included physical assault, (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Mental health problems among college students are becoming increasingly common. According to (Breslau, 2017), women are more likely to experience PTSD from partner violence, however women may have a higher probability of developing PTSD due to the various types of IPV traumas they may experience. In the year of 2000, it was approximated that more than 22% of the women surveyed in a

national survey of 16,000 men and an intimate partner had physically assaulted women during their lifetime (Tjaden & Thoennes, 2000).

Adverse Effects of Intimate Partner Violence

IPV can have several different effects on the victim. Victims are subjected to dealing with many types of emotions in order to handle the abuse in which their partner projects on them. CDC (2011), stated that youth and college women who are subjected to violence by a partner may feel anxiety, depression, have nightmares, feel fearful, watchful, constantly on guard, and easily startled. The aforementioned descriptions can be view as Post-Traumatic Stress Symptoms (CDC, 2015). The emotions that the victims incur as a result of being abused can cause them to withdraw from everyday life (Herth & Berenson, 2012). This can be seen though a decrease in class attendance, grades, interacting with friends and colleagues, and provide an overall negative outlook on their college experience (Campbell, 2005).

Female victims who have experienced violence by their partner may feel all are few of the types of the consequences related to this type of violence: physical, psychological, social, reproductive, and altered health behaviors (CDC, 2011). A victim who was sexually, physically, or verbally abused may have experienced psychological effects, suicidal thoughts, lack of trust in those around them, constantly replay the assault in their mind, decreased self-esteem, and constant flashbacks (Tjaden & Thoennes, 2000). The victim may also be led with promiscuous behavior, increased alcohol, and

drug use as a coping mechanism (Campbell, 2002). The effect of IPV not only affects the victim but also those around the victim (Nabors & Jasinski, 2009).

IPV could produce a negative non-nurturing environment to children who may witness this on a normal basis. Children of IPV victims who have a female parent who has experienced IPV could influence that child to grow up and be in a relationship where IPV is experienced and tolerated (Noland, Liller, McDermott, Coulter, & Stephanie, 2004). One in every 15 children in the United States has been exposed to IPV (NCADV, 2016). This type of behavior could influence the child or children to think that IPV behavior is normal. Therefore, watching IPV behavior as a female child could be a contributing factor to females of college aged to be involved in IPV relationships dealing with various types of abuse (NCADV, 2016).

Age and IPV

The risk for IPV among college aged women can be increased depending on many different factors. Female college students are at a higher risk for victimization due to the fact that many of these young females may have been exposed to some type of violence from a friend, partner, or a family member. The exposure to this type of violence could allow the victim to develop a normalcy and tolerance for the behavior, thereby being more accepting of this type of behavior as teenagers between the ages of 11-17 (Vagi, 2016), and this behavior can be carried over into young adulthood. Research has identified that 48% of the females between the ages of 18-24 were more susceptible to IPV than 34% of the women who were between the ages of 25-34 (Carlson, Mcnutt, &

Choi, 2003). This type of acceptance can be contributed to early exposure to seeing IPV behavior as a child and believing it is a normal expression of love.

Attitudes and Perceptions

The victim's perceptions and beliefs about to IPV could have a strong influence as to whether or not she stays in or leave a relationship. IPV victims, who had witnessed Intimate Partner Violence in their home or experienced abuse at a young age, may think that abuse is what a "normal" relationship should look like and may be passed off as what seems to be a true commitment (Nabors, 2006). Men may feel that women who experienced Intimate Partner Violence are to blame for offending their male partner and it is deserved (Vera, 2013). Nabors, (2003)., surveyed 996 college aged women and found more than 23% agreed that other college women who were exposed to some type of Intimate Partner Violence wanted to be treated that way, 57.8% believed Intimate Partner Violence happened because of the way the female treated the male, and that 87.8% agreed that it may have been induced by drugs and alcohol.

Locke and Richman (1999), found that violence from the partner was normal, while white female college students did not ascribe to this. The feminist theory is a theory that was developed to assist in trying to explain gender inequality. Several researchers have used this theory to try to explain the unequal relationship that occurs between male and females in IPV. Some researchers believe the theory helps to explain the perceptions that both male and females have as it pertains to aggression and violence within a relationship. Beliefs as it relates to intimate partner violence can be based on cultural,

religious, or social factors and can help determine if a college age woman would or would not be accepting of violent behavior from their partner.

Prevention of IPV

According to the Centers for Disease Control (2015), there were many programs that had been developed to help prevent IPV, however there were limited programs that offer mental assistance to those women affected. Women who have been affected by IPV often experienced depression, anxiety, anger, low self-esteem, and many other risk factors that may or may not be addressed.

IPV is something that has been primarily known to affect women more than men (Coker et. al, 2005). IPV as it relates to mental health seems to be a common experience among college women. Mental health issues such as personality disorders, depressive symptoms, anger, anxiety, and PTSD were most commonly seen in IPV victims. However, most of the literature that has been published does not discuss these mental health issues in detail.

Definitions of Terms

Age: between the ages of 18-24

College-aged women: a female student enrolled in a college institute

Coping skills: Any pattern or behavioral pattern that enhances an individual's ways to adapt with trauma or abuse (Medical Dictionary, 2009).

Demographic Factors: "Socio-economic characteristics of a population expressed statistically, this can be age, sex, education level, income level, marital status, occupation, religion, family size" (Business Dictionary, 2017).

Race/Ethnicity: "A person's self –identification with one or more social groups (US Department of Commerce, 2017).

Intimate Partner Violence: The act of "physical violence, sexual violence, stalking, and physical aggression (including coercive acts) by a current or former intimate partner" (CDC, 2016).

Post Traumatic Stress Disorder-: A mental health disorder that develops after a shocking, scary, or terrifying event has occurred (NIMH, 2016).

Social Support: The function and quality of supportive social relationships that provides both emotional and mental support (Seeman, 2008).

Socio-Economic Status: A person's social standing/status typically based upon income levels and occupation (American Psychological Association, 2017).

Assumptions

The assumption for this study was that the participants in the study were truthful in their responses describing Intimate Partner Violence, the types of abuse, how they felt mentally after their abuse, and their coping mechanisms and support systems. Another assumption is that the sample size that will be used is representative of college aged women. Mental health issues seemed to be a common factor for women of abuse due to it being a traumatic experience for the women involved. It was assumed that the

participants had a clear understanding of the purpose of the study and why they were chosen to participate. This would also allow deeper research to be conducted as to the Post-Traumatic stressors these victims can incur after they have been abused by a perpetrator they were intimate with. The assumption of this study was that female aged college women who were involved in Intimate Partner Violence may have contributing factors, which lead to Post-Traumatic Stress Disorder with Intimate Partner Violence steadily increasing among college females, the chances of these women to develop Post-Traumatic Stress Disorder increases especially if it was not identified so treatment and healing can begin.

Scopes and Delimitations

The study was conducted to determine if Post-Traumatic Stress Disorder was associated with Intimate Partner Violence among college-aged women. I explored what demographic characteristics might have been associated with Post-Traumatic Stress Disorder among female college victims of Intimate Partner Violence. I was not able to explore the reasons for Intimate Partner Violence and the ways in which victims cope with Intimate Partner Violence and its adverse outcomes.

Significance/Summary/Conclusions

This study was being conducted to determine the association of Post-Traumatic Stress Disorder and Intimate Partner Violence among college aged women and the

associated characteristics. This would help to increase the knowledge among both college staff and surround community. The second part of this research study was to determine what demographic factors may predict Post-Traumatic Stress Disorder symptoms that may occur as a result of Intimate Partner Violence experience. The research regarding Intimate Partner Violence and its association with Post-Traumatic Stress Disorder provided a greater understanding on how violence could affect mental health. The researcher believed the responses from the female victims provided insight as to how traumatizing sexual, mental, verbal, and physical abuse can be for those involved. I hope that the study would provide insight to public health practitioners identify IPV victims who have likely experienced PTSD and intervene earlier to avoid serious consequences. College aged women have such a high rate of being involved in IPV relationships. Thus there is need for increased awareness in order to provide the correct measures to help these women deal with the violence they endure. Treatment can then be based on the type of violence that incurred and the type or post-traumatic stressors that may occur.

However, by identifying the factors that may directly contribute to PTSD symptoms such as ethnicity, race, education level, and cultural background among this group can assist in getting and developing resources to provide adequate support. A victim's beliefs or views on the issue can determine if they feel the violent against them is necessary or warranted. Other researchers have conducted studies closed related to this, but put more focus on the individual's upbringing and violence in the past. This study focused more on their demographics to determine if those factors can predict if PTSD

will occur among the selected group. This study will fill in the gaps when it comes to PTSD symptoms and Intimate Partner Violence among the selected age group. It is hoped that the study will convince the victims to realize that there can be effects long after they have left their violent partner.

Conclusion

In conclusion, it was seen through literature there is still a great need to go deeper when it comes to IPV and mental health issues with special focus on PTSD. PTSD is a disorder that can have a great impact on an IPV victim. The individual may begin to feel anger, depressed, anxious, and any other abnormal behavior related to the type of violence they may have encountered from their partner. The study provided readers with an insight from actual victims and their adverse outcomes. It is hoped that the study benefited the students and caused more awareness on college campuses and improve the quality of life for those victims.

There have been many research studies that have been conducted; however none of them have identified a direct correlation of IPV with PTSD. Previous literature has suggested that mental health of an Intimate Partner Violence victim is a concern; however, there are no direct studies that have researched this area of topic. Therefore, this was a gap in literature, which hopefully this paper fulfilled. Some things that are known from reading other literature is that Post-Traumatic Stress Disorder along with other mental illnesses such as depression, bi-polar, and personality disorders have been discussed as being a possible side effect of victims who have experienced trauma related

to IPV, however it has never been confirmed. Therefore, by using a correlation approach we can determine if a correlation exists and not fixated on causation.

Section 2 – Research Design and Data Collection

Introduction

The purpose of the study was to determine if IPV could be a contributing factor of PTSD symptoms among college age women who have experienced partner violence in comparison to those who do not. The study hopefully assisted in determining if there was an association between demographic factors such as age, socioeconomic status, ethnicity, social support systems, and educational level. This was a quantitative study derived from secondary data from the NISVS survey database conducted by the CDC. The data that used was taken from individuals between the ages of 18-24 years who were in college or had college educations that experienced intimate partner violence. In this section, the research study design, rationale, sample size, and methodology was discussed.

I provided a more detailed description of the target population, the sample size, how it was gathered, and different types of sampling procedures that may have been used to obtain the data. This section included information regarding instruments used and constructs used in the original collection of data in the dataset.

Research Design and Rationale

The research design of the proposed study was a quantitative cross sectional research approach using secondary data from the National Intimate Partner and Sexual

Violence Survey. This secondary data was extracted from the Youth Risk Behavior Surveillance System database (CDC, 2014). The secondary data used a sample size of 9,086 women who were 18 years and older. The selected survey chosen for my study is suitable due to the fact that the data is a cross section of college aged women affected by intimate partner violence and its association with PTSD symptoms. The dependent variable was Post-Traumatic Stress symptoms among women who have experienced IPV. The dependent variable described in the study provided possible outcomes that the college women may or may not have experienced. My statistical plan for this proposed study was to use multiple regressions in order to test the proposed hypothesis. The statistical analysis that was used was descriptive analysis of the targeted population. Therefore, the questions asked for this study was answered by using the data set from the NISVS. The data set was accessible with IRB permission and requests.

A quantitative cross sectional research design focused on the number surveyed college aged women between 18-24 years old. The survey related to National Sexual Violence among partners was conducted on 9,086 women who actually completed the entire survey. A cross sectional approach was chosen for this study due to the fact that it helps to determine if there is an association between a risk factor and a particular outcome. The study seeked to identify the predictive relationship between IPV and Post-Traumatic Stress Disorder symptoms among a group of college aged women. The study focused on the significance of IPV and how it could possibly be a major factor relating to PTSD symptoms. The independent variable was IPV along with the various

characteristics influencing the outcome such as demographic factors, age, race, education level, social support, and SES. The dependent variable is PTSD symptoms among women who may have experienced IPV which is the outcome the IPV will help to determine is associated or not.

I was given access to the questions included in the survey and the questions are relevant to my proposed research. My variables of interest were included in the data set and include questions related to nervousness, paranoia, depression, anxiety, and much more. These are just a few examples of PTSD symptoms. For my research I will be using SPSS along with the information provided by NISVS.

Methodology

Population

The target populations for this study were young women between the ages of 18-24 who are in college or has had some form of college education. Participants in the original study were from all 50 states in the United States. The selection criterion for my study is women would have experienced or is experiencing IPV while in college and have PTSD symptoms after the violence occurred. However, the original dataset included data from both women who had and who had not experienced IPV.

Sampling and Sampling Procedures

The original questionnaire was provided to a larger number of participants that consisted of women who stated they had been in violent relationships, however

approximately 9,086 women responded to all questions in the survey (CDC, 2014). The NISVS used several methods to collect data from both English/Spanish speaking non-institutionalized adults aged 18 and older in 50 of the United States.

By using a dataset that collected data from all 50 states regarding IPV provided a larger sample base to use for the study. The NISVS was conducted using stratified random dual frame collection method. A stratified random duel frame collection method is defined as the gathering of various populations as a whole, however they are then separated into smaller groups who share similar characteristics, to ensure random sampling occurs (CDC, 2014). The stratified dual frame collection was divided by mailed surveys, landline calls, and cell phone calls used. In order to gain participation from landline participants, researchers had to send out letters in advance using a system that took the participants phone number and matched it to an address and they received more than 50% match on most those letters. All participants were offered a $10 incentive for participating and providing researchers with accurate answers and completing the phone interview, approximately 58.4% accepted the incentive. The study focused on the prevalence and characteristics of IPV (CDC, 2014). The survey collected information from ages 18 and older and various ethnicities. The inclusion criteria for the original study were that the female participant had to have previously/currently been in a violent relationship with their partner and be at least 18 years old.

The data that were sampled for my proposed study was secondary data taken from the NISVS. The participants from the original study were recruited by being offered a $10 incentive to participate to either keep or donate to United Way, but had to complete the surveyed questions via landline phone or mail by the researchers from the original research study. For individuals who did not complete this phase they were offered an incentive of $40 to complete phase two of gathering participants. Once they completed and answered all questions related to the survey they were provided the monetary incentive. The power test to be used in this study will be alpha =0.05, effect= true value – hypothesized value (Pezzullo, pg. 46, 2013). In order to gain access to the aforementioned dataset, an IRB letter was sent to the CDC and approved before access is granted to me. The IRB form will be completed and approved by Walden chair before submission to the CDC.

Instrumentation of Constructs

The developers of the NISVS published dataset are the United States Department of Health and Human Services, Centers for Disease Control and Prevention. The dataset was published October 6, 2014. The data retrieved from the original study was used to measure the association of violence as it related to the IPV and evaluated the various types ‘of violence that was associated with IPV such as psychological aggression, physical violence, stalking, and sexual violence. However, for my study the variables of interest were age, SES, social support, gender, education, and ethnicity. The NISVS used the National Random Digital Dial for this study. The National Random Digital dial is a

telephone survey that was used to gather information from its participants. The population used for the original study included women eighteen and older both English and Spanish speaking non-institutionalized women. These women derived from all 50 states, and the District of Columbia (CDC, 2014). The study collected 18,049 interviews, however 1,542 were partially completed. Reliable data was collected by both landline and cell phone collection. Landline collection was 45.2%, while the other 54.8% was collected via cell phone collection.

The study used the same dataset to address the association of the characteristics of IPV and how it may associated with PTSD symptoms. The instrument used in the survey included data such as age, race, SES, and behavioral issues. The instrument also included measures that discussed social support, and mental anguish associated with Intimate Partner Violence.

The NISVS questionnaire had several components to it that will be used in my study. The first major component, sections 1-3, ask questions regarding the participants health, race, ethnicity, demographics, SES, education level, and other characteristics they may possess. Sections 4-11 of the questionnaire asked questions regarding physical aggression, coerciveness into sex, stalking, entrapment, and physical violence. Section 12-13 of the questionnaire asked questions related to the participants relationship, and follow-up questions about Intimate Partner Violence. The plan for reliability for the proposed study was to use a large random sample of 2000 participants for analysis. A simple random sample of 2000 participants was significant for my study due to the fact

that there was less room for error due to each participant having an equal probability of being selected nonspecific to age, ethnicity and SES. I used the Relative Standard error with a >25% estimate. Therefore, stating that if my study reliability is greater than 25% my data may be deemed unreliable (CDC, 2014). Permission to access the data was obtained through a letter submitted to the CDC and have IRB approval.

Operationalization of Construct

The demographic variables that used as control variables are stated below. I used the same definitions as the original study (CDC, 2014). The characteristics were addressed in my study as follows.

Race/Ethnicity

Ethnicity is a categorical variable. In section 1 of the questionnaire these were the basic questions that were asked. The questions asked for the following ethnicities, which were: "Are you Hispanic or Latina?", Responses "Yes or No" and If yes, "Which of these Hispanic, Latino, or Spanish groups" 1. Mexican, Chicano 2. Puerto Rican 3. Cuban 4. Dominican 5. Central or South American 6. Spanish 7. Other Another question was asked as well such as "What is your Race?" the categories to select from White, Black, Asian, Native Hawaiian or Pacific Islander, American Indian or Alaskan Indian, Other, Don't Know, or Refused.

Age

In order to determine age, researchers only asked: "What year were you born?" which can be categorized as a continuous variable. This question provided was used to

determine age only at the time of the study. The study did not break them down in any other age categories for the research study when asking questions. However once the research was completed, the age groups were broken down in to five age groups, which were 18-24 years, 25-29 years, 30-44 years, 45-64 years, and 65 and older years of age, which could be described as categorical ordinal variables which will help to better identify college aged students needed for this study.

Education

Education-in this study is a categorical value. The question that was asked in the questionnaire was " What is the highest level of education you have completed?" The choices were 1. No Schooling 2.1st-8th grade 3. Some High School 4. High school graduate 5. Technical or vocational school 6. Some college 7.4 yr. college degree 8. Post Graduate

Income

Income is another categorical variable that allowed the researcher the ability to determine the student's overall income. The question that was asked regarding income was described as "What is the annual household income before taxes? " the responses to choose from were: Less than $10,000, Less than $15,000, Less than $20,000, Less than $25,000, Less than $30,000, Less than $35,000, Less than $50,000, Less than $75,000.

Social Support

Social support was categorical variable which was used to describe the participant's support system. The question was asked "Have you ever talked to any of the following

people about what the perpetrator did?" The choices were Yes or No, if yes, was it a police officer, psychologist, crisis hotline, friend, family, or anyone else. A follow-up question was asked, "If they did talk to someone did it help?" the responses were very, somewhat, little bit, not at all. To assess for PTSD characteristics, there were several questions asked that identified whether or not the participant has had nightmares relating to IPV, or was constantly on guard or watchful, felt numb or detached from their surroundings. These are all characteristics of PTSD symptoms that could be directly related to the violence in their relationship with their partners.

Data Analysis Plan

I analyzed my data using SPSS version 25. Since SPSS will be used for, the study can include sample weights. According to the NISVS database, the sample weight has to be included in their study in order to accurately obtain data estimates related to their study (CDC, 2014). Since the data that was used for my study was secondary data, my data preparation plan included ensuring that the questionnaire by the participants were completed fully not partially, ensure that the questions that were asked were clear and understandable. In order to properly prepare my data for analysis I arranged my data in groups by classifications. Data cleaning for my proposed study included looking for consistency in the data that was collected and any missing values associated and adjusting data where necessary. The type of data analysis that was used is Inferential Statistical analysis using hypothesis testing, which assisted in drawing a conclusion about the noted hypothesis's and how it is associated with college aged women. For my

statistical test I used multiple regression using Chi Square since I conducted a correlation study (Creswell, 2014). The null hypothesis was rejected if p <. 05. My research questions will examine the association of the characteristics of IPV and PTSD symptoms among college aged women.

Research Question 1: What is the association between IPV and PTSD symptoms among college aged women?

H_o1: There is no association between IPV and PTSD symptoms among female college students.

H_11: There is an association between IPV and PTSD symptoms among female college students.

Research Question 2: What is the association between ages as a predicting factor of the occurrences of PTSD symptoms among college women who have experienced IPV?

H_o1: There is no association between age and PTSD symptoms among college women who have experienced IPV.

H_11: There is an association between age and PTSD symptoms among college women who have experienced IPV

Research Question 3: What is the association between socioeconomic statuses as a predicting factor of the occurrences of PTSD symptoms among college women who have experienced IPV?

H_o1: There is no association between socioeconomic status and PTSD symptoms among college women who have experienced IPV

$H_1$1**:** There is an association between socioeconomic status and PTSD symptoms among college women who have experienced IPV.

Research Question 4**:** What is the association between ethnicity as a predicting factor of the occurrence of PTSD and college women who have experienced IPV?

H_o1: There is no association between ethnicity might not be a predictor of PTSD symptoms among college women who have experienced IPV.

$H_1$1: There is an association between ethnicity and PTSD symptoms among college women who have experienced IPV.

Research Question 5: What is the association between social support as a predicting factor of the occurrence of PTSD and college women who have experienced IPV?

H_o1: There is no association between social support and Post-Traumatic Stress Disorder symptoms among college women who have experienced Intimate Partner Violence.

$H_1$1: There is an association between social support and PTSD symptoms among college women who have experienced IPV.

Research Question 6: What is the association between education level as a predicting factor of the occurrence of PTSD and college women who have experienced IPV?

H_o1: There is no association between education level and PTSD symptoms among college women who have experienced IPV.

$H_1 1$: There is an association between education level and PTSD symptoms among college women who have experienced IPV.

Threats to Validity

A potential threat to external validity for this study was selection bias. The study used a random sampling, however proper selection must be collected since the entire target population will not be used. Sampling was to be obtained in a fair way. Another threat to validity was volunteer bias. The participants were offered money to complete the initial survey; however some participants still did not complete the first round, so researchers offered them additional monies to complete the study. Volunteer bias could have occurred due to fact that the participant's response could have been influenced based on personal reason or gain. This type of bias can reduce various types of similarity of the characteristics between both the random sample and the target population that this study will be researching.

Validity in a study focuses on ensuring we are actually answering what we are supposed to be answering from our proposed research question (Creswell, 2009). An external validity issue could be stated due to the fact telephone surveys both landline and cell phones were used. Due to the fact that both types of surveys were included, there could have been error due to participants have several chances to complete the survey and duplicate information. The post stratification weight was applied to assist with missing

data from individuals who did not respond, partially completed the survey, and for those who only completed the survey (CDC, 2014).

This research study was limited to women between the ages of 18-24, who are attending college. Participants must have previously been in an Intimate Partner Violent relationship for an extended period of time. Participants must express PTSD symptoms following the end of the violent relationship. The limitations of the study were that the participants were not asked directly about PTSD nor had been medically diagnosed with PTSD; the study proceeded with PTSD symptoms listed in the NISVS questionnaire. Another limitation of the study was that due to the fact the proposed study was cross sectional, that reader nor other researchers can use this study to determine if IPV causes PTSD symptoms, because those questions were not directly asked of the respondents.

Ethical Procedures

Researchers had a responsibility for protecting the identity of its participants. According to (NIH, 2015), participants who actively participate in research study should have their identity hidden. Any type of information that can be linked back to the individual is breach of their rights and safety. Information obtained from the study should not bring forth physical or emotional harm, or any type of embarrassment as a result of research participation. When collecting data for the NISVS, researchers ensured participants knew their rights and could quite at any point in time during the survey process if they were uncomfortable or felt unsafe. The researchers also provided

resources that fit that individual female's situation should they pursue help after the survey was completed.

The NISVS sampling design did not ask for any names or identifying characteristics that could be linked back to the participant. Interviewers that collected the data for NISVS were trained for 16 hours prior and had 2 additional hours of post training practice to ensure they would make the participant feel comfortable answering questions. After careful training with each researcher which included lecture, demonstrations, mock interviews, post training was also offered to ensure the researcher was comfortable in asking and collecting answers to sensitive questions, and providing comfortably to they interviewed (CDC, 2014). The interviewer also ensured that the participants answered questions in a safe and quiet environment and 10% of the actual interviewers were monitored by senior researchers (CDC, 2014). No data was analyzed as of yet due to the fact I do not have IRB approval as of yet. The study does not discuss getting rid of the data after a certain period of time. The data was stored with the CDC, however access has to be granted before it can be viewed or used in any research study.

In order to use the data I applied to Walden IRB for permission to analyze the data. Once that was completed I only used the identified data. When using data from the NISVS dataset I understood the data was to be used strictly for research purposes and was to be maintained as confidential information and is only to be used according to the Walden and IRB standards and guidelines. The data retrieved from the dataset was stored

in a lock file with password access only for up to 5 years; the data will then be properly destroyed.

Summary

The information from the research questions were provided for review and helped to provide more information needed to prepare this study. This chapter provided information related to the rationale, researcher design, methodology, detailed description of variables, data analysis, and any possible limitations to the study. I conducted a secondary analysis of data from the archival data from the NISVS dataset, in order to explore the association of characteristics of IPV and PTSD symptoms among college aged women. My data analysis included an inferential statistical analysis-using Chi square. In addition, the findings from my study can assist in addressing the characteristics associated with college aged women who have been victims of IPV and how it may have been associated with PTSD symptoms. This provided a social change in how we identified these victims and how to bring more public awareness to this population of people. Section 3 provided more detail related to the actual statistical analysis testing of the data for the proposed research study and determine a conclusion to the proposed research questions.

Section 3 – Presentation of the Results and Findings

Introduction

Brief Review of the Purpose, Research Questions, and Hypotheses

The purpose of this associational quantitative study was to more completely understand the relationship between IPV and PTSD symptoms among college-aged women. Specifically, the aim was to determine if patterns of post-traumatic symptomology corresponded to patterns of IPV in ways that suggested IPV played a role in the emergence of PTSD symptoms.

For this section, a sample of college-aged women who had experienced intimate partner violence was retrieved as archival data from the National Intimate Partner and Sexual Violence Survey database (hereafter NISVS) on the Center for Disease Control (CDC) website. The women were of two types: women who developed PTSD symptoms and women who did not develop PTSD symptoms. In addition to patterns of IPV, the NISVS database included several demographic factors that were also potentially associated with PTSD symptoms; these were examined as well: age, socio-economic status, ethnicity, social support, and educational level.

Research Questions and Hypotheses

Research Question 1: What is the association between Intimate Partner Violence and Post-Traumatic Stress Disorder among college-aged women?

$H_0$1: There is no association between Intimate Partner Violence and Post-Traumatic Stress Disorder among college-aged women.

$H_1$1: There is an association between Intimate Partner Violence and Post-Traumatic Stress Disorder among college-aged women.

Research Question 2: What is the association between age as a predicting factor of the occurrences of Post-Traumatic Stress Disorder symptoms among college women who have experienced Intimate Partner Violence (IPV)?

$H_0$2: There is no association between age and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

$H_1$2: There is an association between age and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence .

Research Question 3: What is the association between socio-economic status as a predicting factor of the occurrences of Post-Traumatic Stress Disorder symptoms among college women who have experienced Intimate Partner Violence ?

$H_0$3: There is no association between socio-economic status and Post-Traumatic Stress Disorder among college women who have experienced

$H_1$3: There is an association between socio-economic status and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence .

Research Question 4: What is the association between ethnicity as a predicting factor of the occurrence of Post-Traumatic Stress Disorder and college women who have experienced Intimate Partner Violence?

$H_0$4: There is no association between ethnicity might not be a predictor of Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

$H_1$4: There is an association between ethnicity and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence.

Research Question 5: What is the association between social support as a predicting factor of the occurrence of Post-Traumatic Stress Disorder and college women who have experienced Intimate Partner Violence?

$H_0$5: There is no association between social support and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence .

$H_1$5: There is an association between social support and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence .

Research Question 6: What is the association between educational level as a predicting factor of the occurrence of Post-Traumatic Stress Disorder and college women who have experienced Intimate Partner Violence?

$H_0$6: There is no association between educational level and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence .

$H_1$6: There is an association between educational level and Post-Traumatic Stress Disorder among college women who have experienced Intimate Partner Violence .

Organizational Preview of Section 3

The remainder of this results section is divided into five parts. The first part, Data Collection of Secondary Data Set, is comprised of four sub-parts : time frame for data collection, recruitment, and response rates of secondary data set; discrepancies between secondary data set and plan presented into Section 2: and extent of sample representativeness to population. The second part, Results - Descriptive Statistics that Appropriately Characterize the Sample, is comprised of three sub-parts (descriptive statistics that characterize the sample by PTSD Symptoms; descriptive statistics that characterize four broad categories of IPV; and descriptive statistics that characterize three specific types of IPV assault). The third part, Evaluation of Statistical Assumptions as Appropriate to the Study, is comprised of two sub-parts (chi-squares and independent samples *t* tests versus Welch *t'* tests). The fourth part, Findings from Statistical Analysis, is comprised of six sub-parts (results for research questions 1-6, respectively). The fifth and final part is the summary.

Data Collection of Secondary Data Set

The time frame for the original collection of the data was over a period of 10 years. Researchers recruited participants and offered $10.00 token of appreciation to anyone who completed the interview via telephone.

The discrepancies between the secondary data set and the plan presented in Section 2 is the sample size. The plan in section two included a statement that a random sample size of 2000 would be used for this study. However, once access to the dataset had been granted noted that there were a lot of participants both male and females who

did not meet the criteria set forth for this particular study, therefore the sample size of 199 was much smaller than anticipated; although much smaller, there was sufficient power to detect an effect size.

Baseline Descriptive and Demographic Characteristics of the Sample

A total of 199 records of college-aged women who experienced intimate partner violence were retrieved from the archival NISVS database covering the years 2000-2010. Table 1 includes a summary of selected demographic characteristics. At the time of her IPV experiences, the modal woman in this study was an 18-21-year-old Caucasian woman who had completed some college and lived in a household with an income of over $75,000 annually.

The women experienced IPV when they were between the ages of 18 and 24 years. They were approximately divided between the two age groups. Two-thirds had completed some college and the other third had obtained their college degree. Three-quarters of the women were Caucasian. Less than one out of every five women in the sample was Hispanic, and smaller numbers of records referred to African American, American Indian, and Asian women.

SES was measured as annual income at the time the young woman experienced IPV. The brackets were subdivided into narrow income ranges. Table 1 shows that there were fairly comparable numbers of women in all of the income categories. The bracket with the lowest number of women in it was <$75K. the bracket with the highest number of women in it was >$75k

Table 1

Demographic Characteristics of the Sample, N = 199 women

	Frequency	Percent
Age Categories		
18-21	108	54
22-24	87	44
Subtotal	195	98
Missing	4	2
Total	199	100
Education		
Some College	136	68
4-Year College Degree	59	30
Post-Graduate Studies	4	2
Total	199	100
Ethnicity		
African American	12	6
American Indian	5	2
Asian	2	1
Caucasian	148	74
Hispanic	32	16
Total	199	100
SES		
<$10K	24	13
<$15K	22	12
<$20K	23	13
<$25K	20	11
<$35K	19	10
<$50K	27	15
<$75K	16	9
>$75K	31	17
Subtotal	182	100
Missing	17	
Total	199	

Extent of Sample Representativeness to Population

The sample size of 199 participants is representative of the population due the fact that once the data from the large data set had been scrubbed, the participants who met criteria was only comprised of 378 participants. There was missing data and those participants were skipped during the random selection. Therefore, 199 participants who had experienced IPV are representative and an appropriate sample size. Of the 378 participants who had experienced IPV, there were approximately 179 participants with missing data. The missing data was by random chance due to the fact there was no particular order in pattern in which they were selected. The participants were selected randomly due to the fact that there was a lot of missing data/blanks on their questionnaire, henceforth, those were skipped and the next one was selected if criteria was met and data was present. There was no inherent order in which the data was selected. I just sifted through the data and eliminated those that had dramatic missing parts.

Results

Descriptive Statistics that Characterize the Sample by PTSD Symptoms

The NISVS database provided categorical data on three types of PTSD symptoms: feeling fearful, being on guard, and experiencing nightmares. The data was pre-coded based off questionnaires that were provided to the participants. Precoded meaning codes were already assigned to the expected answers. However, for my study I took the three characteristics that were used in the questionnaire and numbered them as

they were provided since they were categorical variables. . Each woman's archived data only reflected whether or not she had experienced each of the three types of PTSD symptoms, not how often she experienced each. Data retrieved from the archival NISVS database for this study included a subset of *n* = 136 women whose records included references to PTSD symptoms. These women are hereafter called the "Yes PTSD symptom" group. The other 63 women are hereafter called the "No PTSD symptom" group.

Figure 1 illustrates the percentages of women in the Yes PTSD group by symptom category. The illustration shows that the majority of the women felt fearful, on guard, or both, 89%, *n* = 121 out of 136 women.

Figure 1 contains other details. Specifically, two-thirds of the women in the Yes PTSD symptom group reported a single PTSD symptom, 63%, *n* = 85 women. Of these, a third felt fearful, *n* = 49 women. A quarter felt on guard, *n* = 32 women. A small percentage, *n* = 4 women, had nightmares.

The other third of the women in the Yes PTSD symptom group reported a combination of PTSD symptoms, 37%, *n* = 51 women. Figure 1 shows that most of them, *n* = 40 women, 29%, felt fearful and on guard. One woman felt fearful and had nightmares. Ten women, 7%, experienced all three PTSD symptoms.

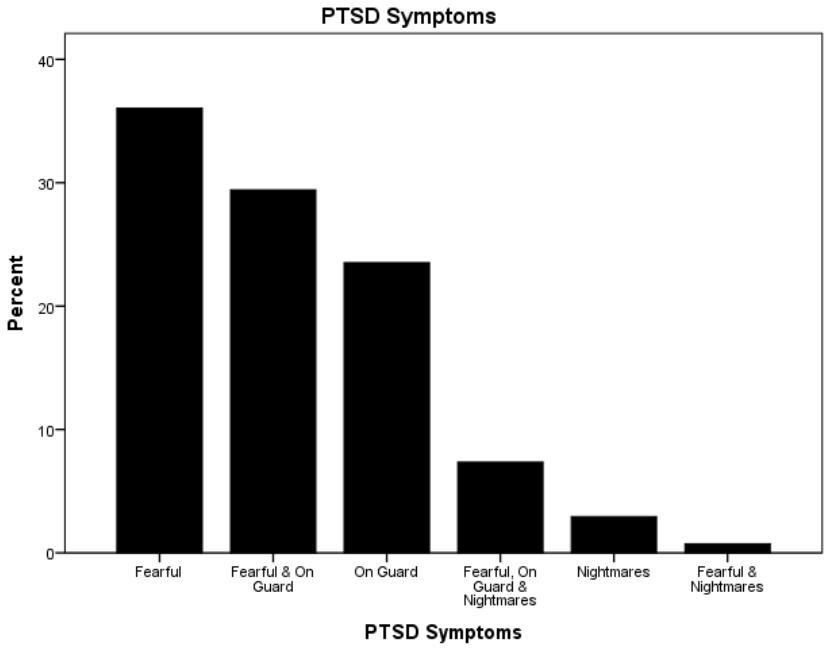

Figure 1. Percentage distribution of women in the Yes PTSD group by PTSD symptoms.

The archival NISVS database had data on two types of IPV. In order to distinguish the two types of IPV, one type is referred to as "four broad categories of IPV." The other type is referred to as "three specific types of IPV assault." Each is described next.

Descriptive Statistics that Characterize Four Broad Categories of IPV

The four broad categories of IPV were sexual, psychological, physical, and entrapment. The archived data for each woman reflected only whether or not she had experienced each of these four broad categories of violence, not how often she experienced it. Numbers and percentages of all of the women in the database are listed on Table 2 and illustrated on Figure 2.

Table 2 includes the numbers and percentages of women by the four broad categories of IPV. The top row on Table 2 shows that just under half of the women had experienced sexual IPV. Another one woman out of every five women experienced physical IPV, psychological IPV, *and* entrapment. About half that many women experienced entrapment or psychological IPV. Approximately a third, 34%, $n = 68$ women, reported a combination of pairs of IPV categories. To differentiate references to sexual IPV from references to physical, psychological, and/or entrapment IPV, the latter trio of terms is hereafter collectively called 'emotional sabotage' in this dissertation.

Table 2

Frequency Distribution of Women by Four Broad Categories of IPV

Violence Categories	Numbers of Women	Percentage
Sexual	87	44
Physical, Psychological, & Entrapment	41	21
Entrapment	24	12
Psychological	20	10
Psychological & Entrapment	16	8
Physical & Psychological	5	2
Physical	3	2
Physical & Entrapment	3	2
Total	199	100

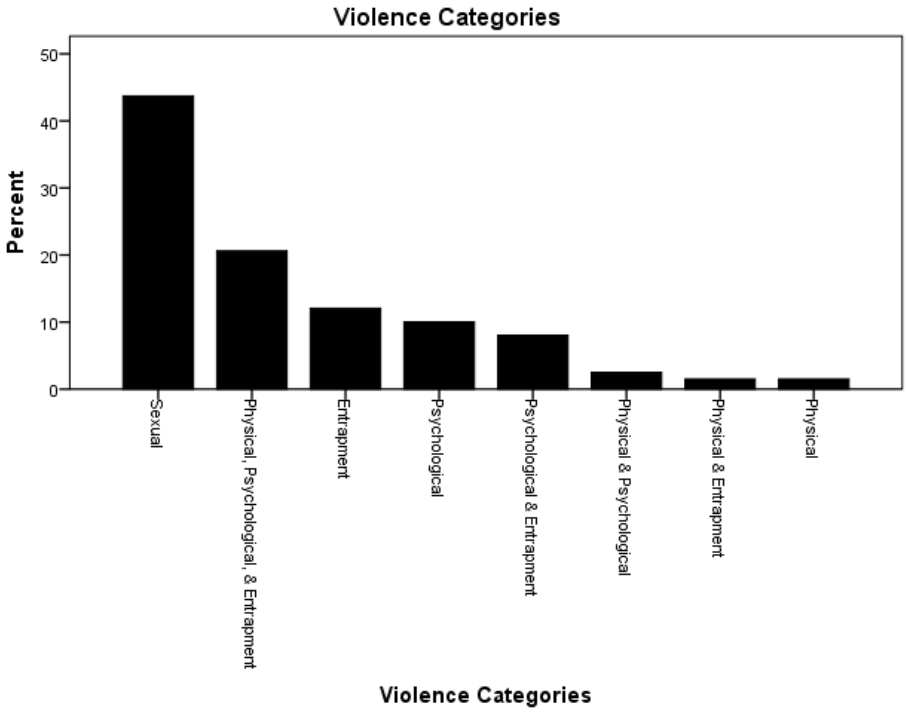

Figure 2. Percentage distribution of women by four broad categories of IPV.

Descriptive Statistics that Characterize Three Specific Types of IPV Assault

The three specific types of IPV assault each represented a set of behaviors with the same outcome. One of the three types of assaults was labeled *coercive control and entrapment* (CCE). It includes behaviors that are intended to monitor and restrain an intimate partner, such as threats, interference with family and friends, and limiting access to money. It also includes behaviors intended to regulate reproductive or sexual health. A second type of assault was labeled *physical violence* (PV). It includes direct contact behaviors such as being slapped, pushed, shoved, hurt by pulling hair, hit with something hard, kicked, slammed against something, choked or suffocated, beaten, burned on purpose, and threatened with a knife or gun. A third type of assault was labeled

psychological aggression (PA). It includes non-contact behaviors such as inescapable exposure to the intimate partner's dangerous behaviors and emotional degradation such name calling, shame, insults, and humiliation.

In contrast to the data for the four broad categories of IPV (which were dichotomous reflections of whether or not the woman had experienced each type), the data points for the three specific types of IPV assault were each woman's estimates of the number of times she had experienced the assault in total from one or more intimate partners. For each woman, for each specific type of IPV assault, the total number of experiences was added together to generate a summated scale (SS), labeled the Coercive Control & Entrapment SS, the Psychological Aggression SS, and the Physical Violence SS, respectively.

Summated scale means are illustrated on Figure 3. The mean numbers of occurrences were comparable for behaviors associated with coercive control and entrapment, and psychological aggression. The women experienced physical violence about half as often on average.

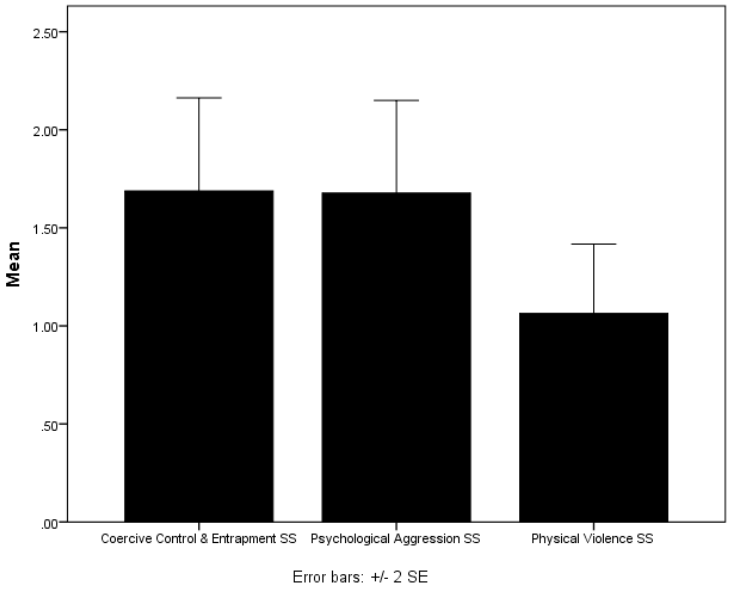

Figure 3. Summated scale means for the three specific types of IPV assault.

Corresponding descriptive statistics for the three specific types of IPV assault summated scales are listed on Table 3. For the Coercive Control & Entrapment SS and the Psychological Aggression SS, the means are similar in value. Both confidence intervals estimated that the true frequency was between one and two occurrences. Whereas some women did not experience these forms of assault, indicated by minimums of zero, the women who reported the highest numbers of incidences estimated 28 and 19 incidents, respectively.

For the Physical Violence SS, the mean indicated that the average experience was one incident. The confidence interval also estimated that the women experience about one physically violent assault. However, the women with the highest numbers estimated 16 physically violent assaults. The data on Table 3 show that the experience of IPV was highly variable.

Table 3

Descriptive Statistics for the Three Specific Types of IPV Assault, N = 189 women

Descriptive Statistics		Coercive Control & Entrapment SS	Psychological Aggression SS	Physical Violence SS
Mean (SE)		1.68 (0.23)	1.67 (0.23)	1.06 (.18)
95% CI	LB	1.21	1.21	0.71
	UB	2.15	2.14	1.41
5% Trimmed Mean		1.20	1.11	0.66
Median		0.00	0.00	0.00
Variance		10.67	10.56	5.91
Std. Deviation		3.26	3.24	2.43
Minimum		0.00	0.00	0.00
Maximum		28.00	19.00	16.00
Range		28.00	19.00	16.00
IQR		2.00	2.00	1.00
Skewness		4.01	3.06	3.09
Kurtosis		24.12	10.44	11.36

Note. 95% CI = 95% confidence interval of the mean. LB = lower bound of the 95% CI. UB = upper bound of the 95% CI. IQR = Interquartile range.

Evaluation of Statistical Assumptions as Appropriate to the Study

Chi-squares

RQ1-RQ6 were tested with chi-square tests of independence. This was because the pertinent variables (PTSD symptoms status, categories of IPV, and demographic variables) were categorical. (There was on one exception, discussed below in the section that briefly describes independent *t* tests.) for chi-square analysis, categorical data are set up in contingency or cross-tabulated tables. In the current study, PTSD symptom status (yes or no) was cross-tabulated with categories of IPV and demographic variables such as age and economic bracket. Chi-square tests analyze data by comparing two sets of numbers: the numbers of data points that fall into each cross-tabulated category (observed

counts or frequencies) to the numbers of data points that are expected to fall into that category if the two variables that created the cross-tabulated category were unrelated (expected counts or frequencies expected to occur by chance, Siegel & Castellan, 1988). In the current study, *observed counts* were the actual numbers of women retrieved from the archival NISVS database that fell into each cross-tabulated PTSD-IPV category and each PTSD-demographic category. *Expected counts* were the number of women who would be expected to fall into each category if PTSD symptoms status was unrelated to the other categorical variable. The Yates correction was applied to 2 x 2 cross-tabulations, which reduces the observed-expected difference by half a point to create a more accurate fit with chi-square distributions for two dichotomous variables (Siegel & Castellan, 1988). An overall chi-square statistic indicates whether or not the distribution of the observed counts differs significantly from the chance distribution. For significant chi-square statistics, individual pairs of observed and expected counts are then inspected for a statistical significance, by transforming the observed-expected count differences into *z* scores called *adjusted residuals*. Adjusted residuals that are ±1.96 identify pairs whose observe count differs significantly from chance expectations (Siegel & Castellan, 1988). The chi-square assumption is that no more than 20% of the cells have expected counts of 5 or less. One solution is to collapse categories to increase the counts as long as there are theoretically or intuitively reasonable ways of doing so (Siegel & Castellan, 1988). Several variables were collapsed to meet this 20%-of-the-cells assumption, explained in the section that presents the results of testing each research question. Effect

sizes were measured with phi correlations (Φ) for 2x2 cross-tabulations and with Cramer's *V* correlations for cross-tabulations with more levels. These are interpreted the same way as Pearson correlations: small effect $r = .10$; medium effect $r = .30$; large effect $r = .50$ (Cohen, 1988).

Independent Samples *t* Tests versus Welch *t'* Tests

With this research I aimed to compare the experiences of two groups of women, those who developed PTSD symptoms and those who did not develop PTSD symptoms subsequent to IPV. The Coercive Control & Entrapment SS, the Psychological Aggression SS, and the Physical Violence SS, whose means are shown on Figure 3, are ratio-scaled or continuous-scaled variables. Summated scales were compared across the two groups of women as part of RQ1. When exploring differences between continuous-scaled dependent variables across two groups, an independent samples *t* test is the appropriate test to use (Weaver & Goldberg, 2011). The *t* test generates a *t* statistic and a *p* value (which is based on the number of degrees of freedom, calculated as the total number of data points minus 2). The *p* value (*p* = probability) is compared to the alpha level and a decision is made to reject or fail to reject the null hypothesis. In the current study, PTSD symptoms status was the independent variable, with only two levels (Yes PTSD symptoms or No PTSD symptoms). The continuous dependent variables were the summated scales.

The independent *t* test is used when the two groups are the same size or close to the same size and the data meet the *t* test assumptions of statistical normality, linearity,

and homogeneity of variance (Weaver & Goldberg, 2011). In this study, however, there were twice as many women with PTSD symptoms as not. So, the group sizes were not the same. Moreover, experiences reflected in the summated scales were so different, both within and between the two groups of women, that the data violated the assumption of the homogeneity of variables (boxplots shown in the section that presents these results). When data violate the homogeneity assumption, the Welch test (Welch *t'*) is used instead of the independent *t* test because the Welch calculations take heterogeneity of variance into consideration (Kohr & Games, 1974) and Glass' *delta* (*Δ*) is used in place of Cohen's *d* as the effect size statistic. Effect size statistics assess the magnitude and practical importance of results outside of statistical significance (Weaver & Goldberg, 2011). Glass' delta divides the average (mean) difference between means by the smaller of the two standard deviations and is interpreted as small (*d* = .20), medium (*d* = .50), or large (*d* = .80).

Findings from Statistical Analysis

This part presents findings from statistical analyses, organized by research questions and corresponding hypotheses. It presents exact statistics and associated probability values, confidence intervals as appropriate, effect sizes as appropriate. Post-hoc analyses were not applicable.

Results for Research Question 1

RQ1 was, What is the association between Intimate Partner Violence (IPV) and Post-Traumatic Stress Disorder among college-aged women? RQ1 was addressed with the two measures of IPV separately. First, results are shown for the four broad categories of IPV. Second, results are shown for the three specific types of IPV assault.

Four broad categories of IPV. The four broad categories of IPV were sexual, psychological, physical, and entrapment. Also, the trio of psychological, physical, and entrapment was labeled emotional sabotage to differentiate those experiences from sexual IPV. Finally, the women reported eight different types of experiences, illustrated on Figure 2. That is, some women only experienced one of the categories and others experienced combinations of categories.

To have an adequate number of data points in each cell of a cross-tabulation for RQ1, the eight different types of violent experiences correspondent to the four broad categories of IPV, illustrated on Figure 2, were collapsed into the variable, Dichotomous Violence Categories. This variable had two levels: sexual experiences and emotional sabotage (i.e., experiences involving psychological, physical, and/ or entrapment IPV but not sexual IPV). Then the Dichotomous Violence Categories were cross-tabulated with PTSD symptoms (with two levels: No PTSD symptoms, Yes PTSD symptoms). A chi-square test of independence was run to test the significance of the association between PTSD symptoms and IPV measured dichotomously. The hypotheses were:

***H_0*1:** There is no association between Intimate Partner Violence (IPV) and Post-Traumatic Stress Disorder symptoms among college-aged women.

$H_1$1: There is a statistically significant association between Intimate Partner Violence (IPV) and Post-Traumatic Stress Disorder among college-aged women.

Results of the chi-square for RQ1 showed that there was a statistically significant association between IPV when measured dichotomously and PTSD symptoms among college-aged women, X^2 (1, 199) = 115.30, $p < .001$. The null hypothesis was rejected. The type of IPV experienced had a strong effect on PTSD symptoms, $\Phi = .77$, $p < .001$.

Table 4 lists statistics from the chi-square test. Adjusted residuals showed that there were significantly more numbers of women in the No PTSD symptoms group who experienced sexual violence than expected. Adjusted residuals also showed that there were significantly more women in the Yes PTSD symptoms group who experienced emotional sabotage than expected.

Table 4

Cross-tabulation of PTSD and Dichotomous Violence Categories

		PTSD symptoms		
Dichotomous Violence Categories		No PTSD	Yes PTSD	Total
Emotional sabotage: Psychological, Physical, Entrapment	Observed Counts	0	112	112
	Expected Counts	35.5	76.5	112.0
	% within PTSD	0%	82%	56%
	Adjusted Residual	-10.9	10.9	
Sexual	Observed Counts	63	24	87
	Expected Counts	27.5	59.5	87.0
	% within PTSD	100%	18%	44%
	Adjusted Residual	10.9	-10.9	
Total	Observed Counts	63	136	199

	Expected Counts	63.0	136.0	199.0
	% within PTSD	100%	100%	100%

The different numbers of women by PTSD status and violent experiences illustrated on Figure 4 show the source of the significant association and strong effect of IPV on PTSD symptoms. The majority of women in the Yes PTSD group, 82% of the 136 women, reported experiences with emotional sabotage (i.e., some combination of psychological, physical, and/or entrapment behavior). In contrast, all of the women in the No PTSD symptoms group, 100% of the 63 women, reported sexually violent experiences without emotional sabotage.

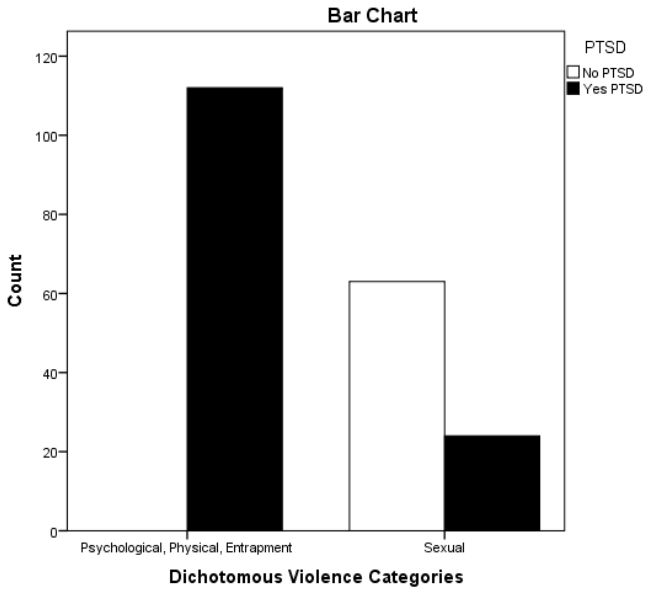

Figure 4. Numbers of women by PTSD symptoms and dichotomous violence categories.

Answer to RQ1 for four broad categories of IPV. The answer to RQ1 (What is the association between Intimate Partner Violence (IPV) and Post-Traumatic Stress

Disorder symptoms among college-aged women?) was that, when IPV was measured as four broad categories, there was a clear distinction in relationships between PTSD status and IPV. Specifically, women who developed PTSD were significantly associated with emotional sabotage from intimate partners in the absence of sexual violence whereas women who did not develop PTSD symptoms were significantly associated with sexual violence in the absence of emotional sabotage.

Three specific types of IPV assault. A second way to measure the relationship between PTSD symptoms and IPV for RQ1 was to compare the three summated scales from the women in the Yes PTSD symptoms group to the women in the No PTSD symptoms group. First, this part shows boxplots and normality statistics to illustrate how the data violated the assumption of homogeneity. Second, it then shows the results of RQ1 summated scale comparisons using the Welch *t'* tests to compensate for non-normality (in lieu of independent samples *t* tests).

The process of screening the three summated scales revealed deviation from normality and homogeneity due to high outliers. The boxplots with high outliers, labeled by case numbers, are shown on Figures 5-7.

High outliers for the Coercive Control & Entrapment SS were mathematically defined by SPSS as 6 or more coercive assaults. Figure 5 shows that there were 17 high outliers; No PTSD symptoms group: Kolmogorov-Smirnov (57) = 0.53, $p < .001$; Yes PTSD group: Kolmogorov-Smirnov (132) = 0.26, $p < .001$.

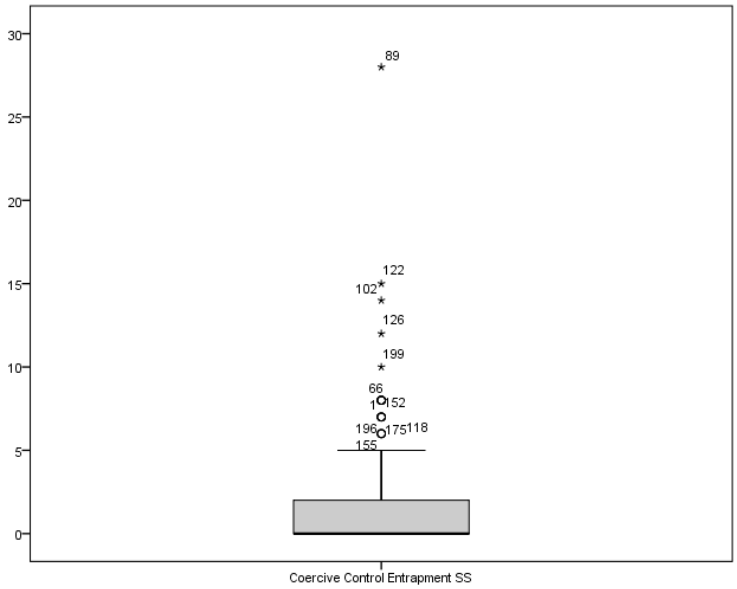

Figure 5. Boxplot of Coercive Control & Entrapment SS.

High outliers for Psychological Aggression SS were mathematically defined as 3 or more physical assaults. Figure 6 shows that there were 15 high outliers; No PTSD symptoms group: Kolmogorov-Smirnov (57) = 0.52, $p < .001$; Yes PTSD symptoms group: Kolmogorov-Smirnov (132) = 0.26, $p < .001$.

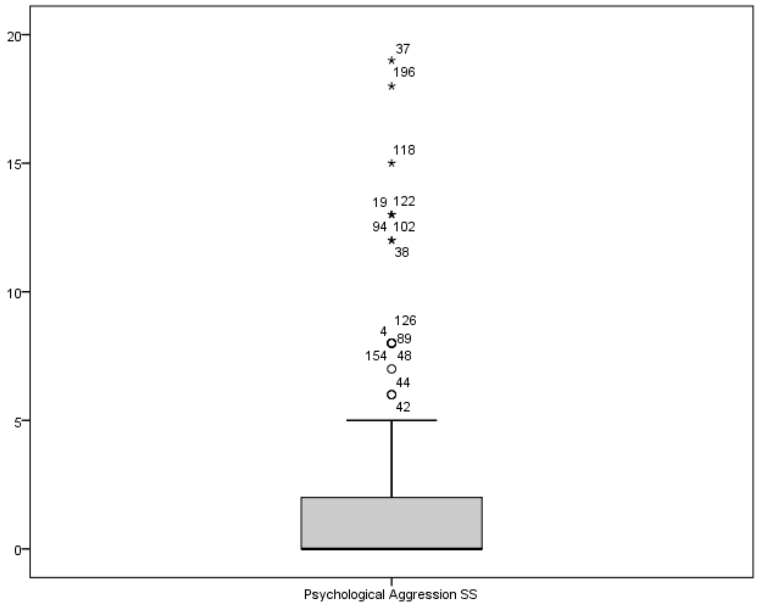

Figure6. Boxplot of Psychological Aggression SS.

High outliers for Physical Violence SS were also mathematically defined as 6 or more psychological assaults. Figure 7 shows that there were 29 high outliers; No PTSD symptoms group: Kolmogorov-Smirnov (57) = 0.53, $p < .001$; Yes PTSD symptoms group: Kolmogorov-Smirnov (132) = 0.33, $p < .001$.

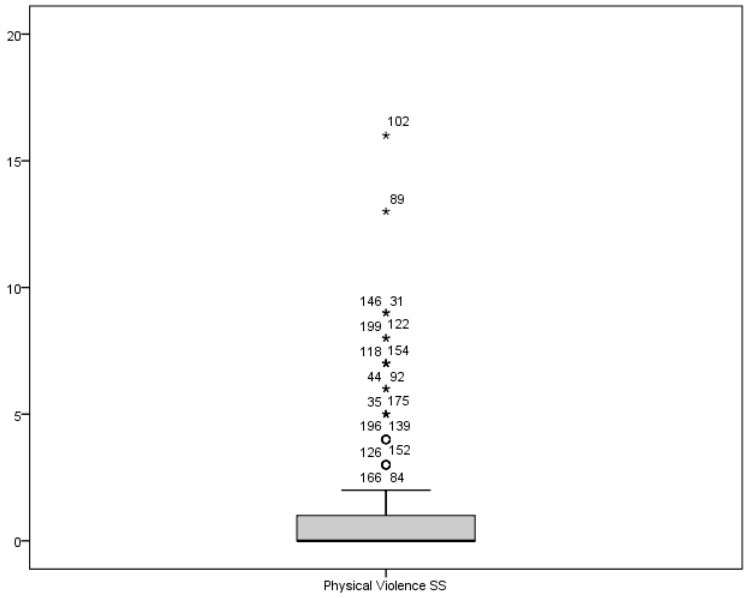

Figure 7. Boxplot of Physical Violence SS.

Deviations from normality and homogeneity, which emanated from the substantial variability in the women's experiences with IPV, required the use of Welch's *t'* test in lieu of an independent samples *t* test. The independent variable was PTSD status (i.e., yes or no). The dependent variables were the three summated scales, respectively. The generic hypotheses were:

$H_0$1: The difference in [Coercive Control & Entrapment; Physical Violence, Psychological Aggression] summated scale between the women with and without PTSD symptoms was not statistically significant.

$H_1$1: The difference in [Coercive Control & Entrapment; Physical Violence, Psychological Aggression] summated scale between the women with and without PTSD symptoms was statistically significant.

Coercive Control & Entrapment SS. Figure 8 shows that women in the No PTSD symptoms group had a lower mean Coercive Control & Entrapment SS, *M* = 0.12. *SD* = 0.93, *n* = 57 women, compared to women in the Yes PTSD group, *M* = 2.37. *SD* = 3.63, *n* = 134 women. Results of Welch's *t'* test, listed on Table 5, showed that the difference in Coercive Control & Entrapment SS means between the women with and without PTSD symptoms was statistically significant. The null hypothesis was rejected. The effect size statistic *Δ* on Table 5 showed a very large effect.

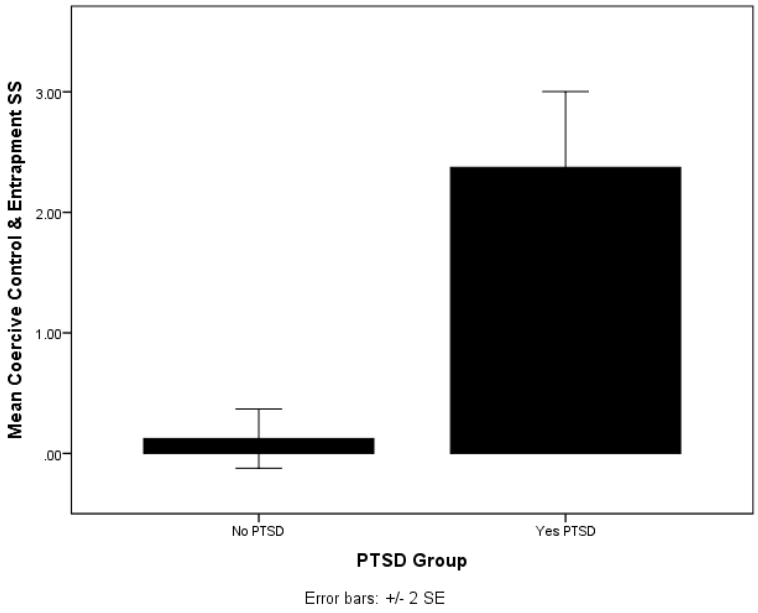

Figure 8. Means of Coercive Control & Entrapment SS across women with and without PTSD symptoms.

Psychological Aggression SS. Figure 9 shows that women in the No PTSD group had a lower mean Psychological Aggression SS, *M* = 0.12. *SD* = 0.68, *n* = 57 women, compared to women in the Yes PTSD symptoms group, *M* = 2.35. *SD* = 3.65, *n* = 133 women. Results of Welch's *t'* test, listed on Table 5, showed that the difference in

Psychological Aggression SS means between the women with and without PTSD was statistically significant. The null hypothesis was rejected. The effect size statistic *Δ* on Table 5 showed a very large effect.

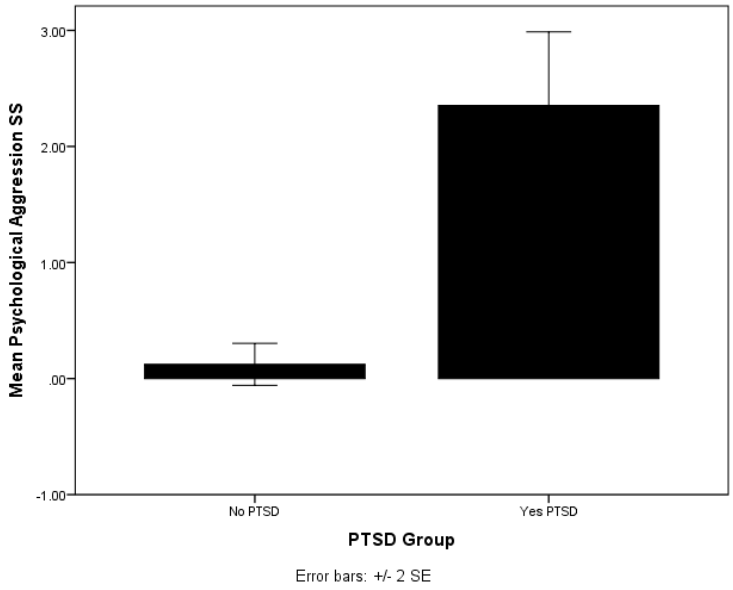

Figure 9. Means of Psychological Aggression SS across women with and without PTSD.

Physical Violence SS. Figure 10 shows that women in the No PTSD symptoms group had a lower mean Physical Violence SS, *M* = 0.07. *SD* = 0.42, *n* = 57 women, compared to women in the Yes PTSD group, *M* = 1.49. *SD* = 2.79, *n* = 132 women. Results of Welch's *t'* test, listed on Table 5, showed that the difference in Physical Violence SS means between the women with and without PTSD was statistically significant. The null hypothesis was rejected. The effect size statistic *Δ* on Table 5 showed a very large effect.

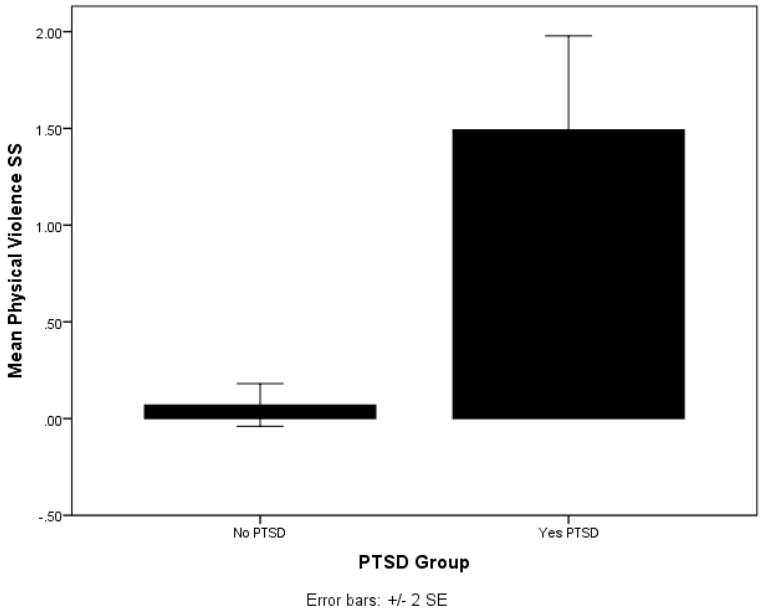

Figure 10. Means of Physical Violence SS across women with and without PTSD symptoms.

Table 5

Welch's t' Test Statistics for RQ1

							95% CI	
Summated Scales	*t*	*df*	*p*	*Δ*	*M Diff*	*SE Diff*	LB	UB
Coercive Control & Entrapment	-6.67	167.46	.000	2.42	-2.25	0.33	-2.92	-1.58
Physical Violence	-5.71	143.96	.000	3.38	-1.42	0.24	-1.91	-.93
Psychological Aggression	-6.77	152.03	.000	3.27	-2.23	0.32	-2.88	-1.58

Note. Equal variances not assumed; SPSS corrected model listed. 95% CI = 95% Confidence Interval of the Difference. LB = lower bound of the 95% CI. UB = upper bound of the 95% CI. M Diff = mean difference. SE Diff = standard error of the difference.

Answer to RQ1 for three specific types of IPV assault. The answer to RQ1 (What is the association between Intimate Partner Violence (IPV) and Post-Traumatic Stress Disorder symptoms among college-aged women?) was that, when IPV was measured as the number of incidences of coercive, psychological, and physical incidents,

there was a clear distinction between women in the two groups. Women who developed PTSD symptoms experienced emotional sabotage (coercive, psychological, and physical incidents) significantly more frequently than women who did not develop PTSD symptoms.

Results for Research Questions 2-6

The remaining research questions asked about the relationship between PTSD symptoms and demographic variables. All of the demographic variables were measured categorically, and were therefore examined for significant associations with chi-square tests.

Table 6 shows the proportions of women who developed PTSD symptoms and women who did not by demographic characteristic. For age, both groups were approximately divided between the two age brackets. For education, both groups showed a larger number of women with some college compared to women who held a 4-year college degree, in 2-to-1 and 3-to-1 ratios, respectively. For ethnicity, both groups showed a larger number of Caucasian women compared to women of other races, in 2-to-1 and 3-to-1 ratios, respectively. A slightly higher percentage of women in the No PTSD symptoms group were African American compared to the Yes PTSD symptoms group. For socio-economic status (SES), higher percentages of women in the Yes PTSD symptoms fell in the low <$10K bracket through the <$50K bracket compared to women in No PTSD group. Proportionately, 2.5 times as many women in the No PTSD symptoms group had incomes >$75K compared to women in the Yes PTSD group.

The modal woman in the No PTSD group was a Caucasian woman who was 18-24 years old, had completed some college, and had a household income of >$75K annually. The modal woman in the Yes PTSD group was a Caucasian woman who was

18-21 years old, had completed some college, and was equally likely to have a household income of <$10K or of <$50K annually.

Table 6

Demographic Characteristics by PTSD Group

	No PTSD		Yes PTSD	
	Frequency	Percent	Frequency	Percent
Age Categories				
18-21	30	50	78	58
22-24	30	50	57	42
Subtotal	60	100	135	100
Missing	3		1	
Total	63		136	
Education				
Some College	38	60	98	72
4-Year College Degree	24	38	35	26
Post-Graduate Studies	1	2	3	2
Total	63	100	136	100
Ethnicity				
African American	7	11	5	4
American Indian	2	3	3	2
Asian	2	3	0	0
Caucasian	43	68	105	77
Hispanic	9	14	23	17
Total	63	100	136	100
SES				
<$10K	5	9	19	15
<$15K	9	1	13	10
<$20K	7	13	16	12
<$25K	4	7	16	12
<$35K	1	2	18	14
<$50K	8	1	19	15
<$75K	4	7	12	9
>$75K	16	30	15	12
Subtotal	54	100	128	100
Missing	9		8	
Total	63		136	

Results for Research Question 2

RQ2 was, What is the association between age as a predicting factor of the occurrences of PTSD symptoms among college women who have experienced IPV? There were two levels of age and two levels of PTSD symptom status. Thus, a 2x2 chi-square test of independence was run. The hypotheses were:

$H_0$2: There is no association between age and PTSD symptoms among college women who have experienced IPV.

$H_1$2: There is an association between age and PTSD symptoms among college women who have experienced IPV.

Figure 11 shows that there were proportionately more women in the Yes PTSD group than in the No PTSD group in both age groups.

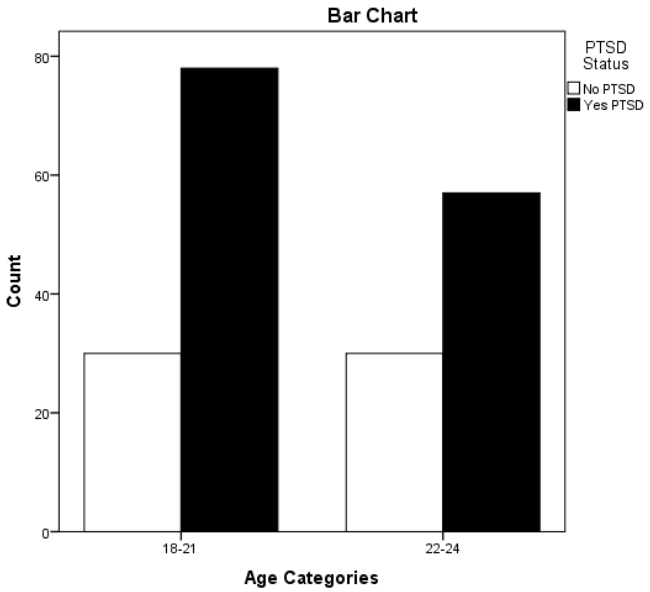

Figure 11. Numbers of women by age categories and PTSD status.

Results of the chi-square for RQ2 showed that the association between PTSD symptoms status and age was non-significant, X^2 (1, 199) = 1.20, p = .313. The null hypothesis was retained. Age has little effect on PTSD, Φ = -.07, p = .313.

Answer to RQ2. The answer to RQ2 (What is the association between age as a predicting factor of the occurrences of PTSD symptoms among college women who have experienced IPV?) was that there was not any association.

Results for Research Question 3

RQ3 was, What is the association between socio-economic status as a predicting factor of the occurrences of PTSD symptoms among college women who have experienced IPV? The relationships between PTSD symptoms status and SES are illustrated on Figure 12. There are proportionately more women in the Yes PTSD symptoms group in all of the SES brackets on Figure 12 with two exceptional brackets. In the bracket, <$35K, the proportion of women in the Yes PTSD and No PTSD symptoms groups is substantially skewed toward women in the Yes PTSD group. In the bracket, >$75K, the proportion of women in the Yes PTSD symptoms and No PTSD symptoms groups is comparable, with slightly more women in the No PTSD group.

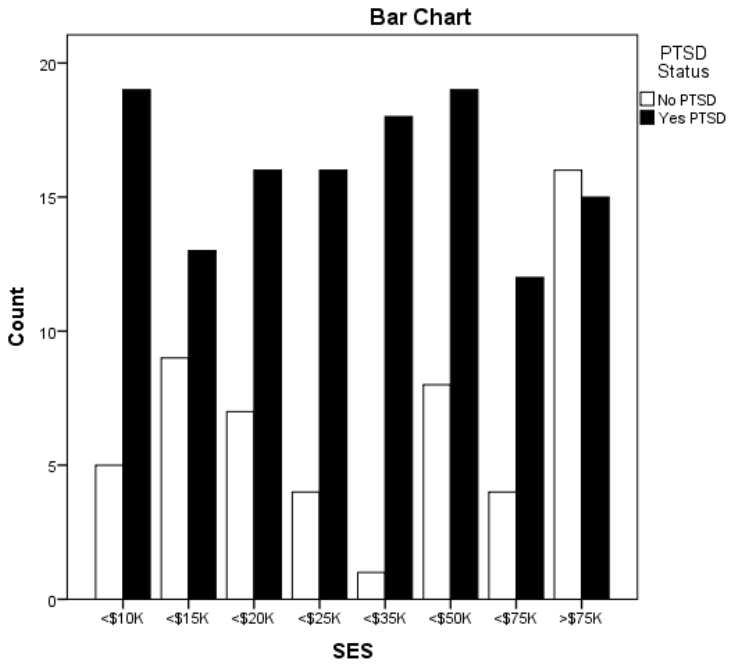

Figure 12. Numbers of women across socio-economic brackets by PTSD symptoms status.

A chi-square test of independence was run to test the following hypotheses:

$H_0$3: There is no association between socio-economic status and PTSD symptoms among college women who have experienced IPV.

$H_1$3: There is an association between socio-economic status and PTSD symptoms among college women who have experienced IPV.

Results of the chi-square for RQ3 showed that there was a statistically significant association between SES and PTSD symptoms among college-aged women, X^2 (7, 182) = 15.88, p = .026. The null hypothesis was rejected. SES had a moderate effect on PTSD, Φ = .30, p = .026. Adjusted residuals indicated that significantly more women in the Yes PTSD group were in the <$35K income bracket, z = 2.5, and that significantly more

women in the No PTSD group fell in the >$75K income bracket, $z = 2.9$, than expected by chance.

Answer to RQ3. The answer to RQ3 (What is the association between socio-economic status as a predicting factor of the occurrences of PTSD symptoms among college women who have experienced IPV?) was that there was a significant association between PTSD symptoms status and SES. More women who developed PTSD symptoms were in the <$35K income bracket and more women who did not develop PTSD symptoms were in the >$75K income bracket than expected by chance.

Results for Research Question 4

RQ4 was, What is the association between ethnicity as a predicting factor of the occurrence of PTSD symptoms and college women who have experienced IPV. The demographic comparison on Table 6 showed that there were small numbers of non-Caucasian women in both PTSD symptoms status groups for a total of 148 Caucasians and 51 non-Caucasians. In order to have a sufficient number of non-Caucasian women for the cells of the cross-tabulation between PTSD symptoms status and ethnicity, non-Caucasian women were combined into one group. The variable was labeled "Dichotomous Ethnic Categories" with two levels, Caucasian women and non-Caucasian women. Figure 13 illustrates the number of women by ethnicity in the group PTSD symptoms groups. The illustration shows that the proportions of women in Yes PTSD symptoms group and in the No PTSD symptoms group were approximately comparable insofar as there were more Caucasian women in both PTSD symptoms groups.

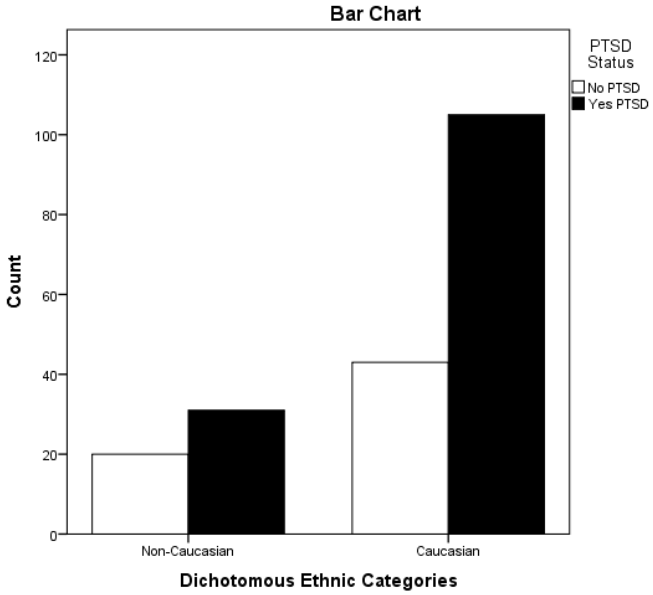

Figure 13. Numbers of women by dichotomous ethnic categories and PTSD status.

The hypotheses were:

$H_0$4: There is no association between ethnicity and PTSD symptoms among college women who have experienced IPV.

$H_1$4: There is an association between ethnicity and PTSD symptoms among college women who have experienced IPV.

Results of the chi-square for RQ4 showed that there was a non-significant association between ethnicity when measured dichotomously and PTSD symptoms among college-aged women, X^2 (1, 199) = 1.81, p = .178. The null hypothesis was retained. Ethnicity had a small effect on PTSD, Φ = .10, p = .178.

Answer to RQ4. The answer to RQ4 (What is the association between ethnicity as a predicting factor of the occurrence of PTSD symptoms and college women who have experienced IPV? was that there was not any association.

Results for Research Question 5

RQ5 was, What is the association between social support as a predicting factor of the occurrence of PTSD symptoms and college women who have experienced IPV? Only four women said they sought social support; all were in the Yes PTSD group. Two of them contacted the police. The other two contacted a crisis intervention hot line. The majority of women had not sought social support, 98%, n = 195 women. Statistical analysis was not conducted. The conclusion was that social support was not a factor in the aftermath of IPV for the majority of the women, regardless of their PTSD symptoms status.

Answer to RQ5. The answer to RQ5 (What is the association between social support as a predicting factor of the occurrence of Post-Traumatic Stress Disorder and college women who have experienced Intimate Partner Violence (IPV)?) was that there did not appear to be any association although the data set was very small. Only four women out of 199 women who experienced IPV sought social support.

Results for Research Question 6

RQ6 was, What is the association between educational level as a predicting factor of the occurrence of PTSD symptoms and college women who have experienced IPV? Demographic comparisons on Table 6 showed that there were only four women in the database with graduate school experience. In order to have a sufficient number of women in each cross-tabulated cell, the four women with graduate school experience were eliminated from a chi-square analysis, which was run to test RQ6. Figure 14 shows the

numbers of women by dichotomous educational categories (some college, 4-year college degree) and PTSD symptoms status. In both PTSD symptoms status groups, there were more women in the Yes PTSD symptoms group than in the No PTSD symptoms group.

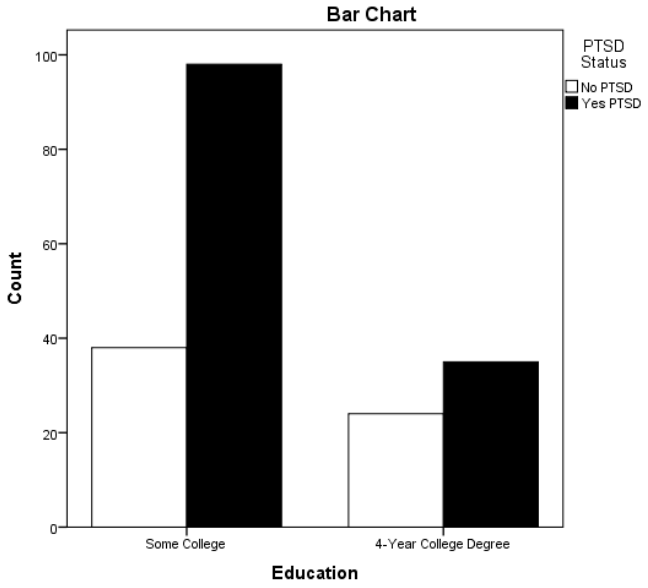

Figure 14. Numbers of women by dichotomous educational categories IPV.

$H_1$6: There is an association between educational level and PTSD symptoms among college women who have experienced IPV.

Results of the chi-square for RQ6 showed that there was a non-significant association between education and PTSD symptoms among college-aged women, X^2 (1, 195) = 3.08, p = .079. The null hypothesis was retained. Educational level had little effect on PTSD symptoms, Φ = .13, p = .079.

Answer to RQ6. The answer to RQ6 (What is the association between educational level as a predicting factor of the occurrence of PTSD symptoms and college

women who have experienced IPV?) was that there was not any association between education and PTSD symptoms.

Table 7

Summary of Chi Square results & P-Value

Research Question	Chi Square Results	P Value	Results
RQ 1	X^2 (1, 199) = 115.30	$p < .001$*	*The results suggest that there was an association between IPV and PTSD among college aged women.*
RQ 2	X^2 (1, 199) = 1.20	$p = .313$	*The results suggest there was no association between age and PTSD symptoms among college aged women*
RQ 3	X^2 (7, 182) = 15.88	$p = .026$	*The results suggest there was no association between SES and PTSD symptoms among college aged women*
RQ 4	X^2 (1, 199) = 1.81	$p = .178$	*The results suggest there was no association between ETHNICITY and PTSD symptoms among college aged women*
RQ 5	*Insufficient data*		*Association between Social Support and PTSD symptoms among college aged women could not be determined*
RQ 6	X^2 (1, 195) = 3.08	$p = .079$	*The results suggest there was no association between Education level and PTSD symptoms among college aged women*

Note. *Findings are statistically significant

Summary

The purpose of this quantitative associational study was to understand the relationship between IPV and (PTSD) symptoms among college-aged women, and potential associations with age, socio-economic status, ethnicity, social support, and educational level. A total of $N = 199$ archival records of college-aged women who experienced intimate partner violence were retrieved from the National Intimate Partner and Sexual Violence Survey database (NISVS): women who developed PTSD symptoms, $n = 136$ women in the "Yes PTSD symptoms" group, and women who did not develop PTSD symptoms, $n = 63$ women in the "No PTSD symptoms" group. The modal woman was an 18-21-year-old Caucasian woman with some college and household income of $75,000+ annually.

The NISVS database provided categorical data on three types of PTSD symptoms: feeling fearful, being on guard, and experiencing nightmares. The majority of the women in the Yes PTSD symptoms group felt fearful, on guard, or both, 89%,

The NISVS database provided data on two types of IPV. One, four broad categories of IPV were sexual, psychological, physical, and entrapment. Approximately half the women experienced sexual IPV or physical, psychological, and/or entrapment IPV, labeled "emotional sabotage." Two, three specific types of IPV represented quantitative experiences with sets of behaviors with common outcomes, combined into summated scales: Coercive Control & Entrapment SS, the Psychological Aggression SS, and the Physical Violence SS

Answer to RQ1. There was a clear distinction in relationships between PTSD symptoms status and IPV when IPV was measured as four broad categories. Specifically, women who developed PTSD were significantly associated with emotional sabotage from intimate partners in the absence of sexual violence, whereas women who did not develop PTSD symptoms were significantly associated with sexual violence in the absence of emotional sabotage. There was also a clear distinction in relationships between PTSD symptoms status and IPV when IPV was measured as the number of incidences of coercive, psychological, and physical incidents. Specifically, women who developed PTSD symptoms experienced significantly higher levels of emotional sabotage compared to women who did not develop PTSD symptoms.

Answer to RQ2. There was not any association between age and PTSD symptoms.

Answer to RQ3. There was a significant association between PTSD symptoms status and SES. More women who developed PTSD symptoms were in the <$35K income bracket and more women who did not develop PTSD symptoms were in the >$75K income bracket than expected by chance.

Answer to RQ4. There was not any association between ethnicity and PTSD symptoms.

Answer to RQ5. There was not any association between social support and PTSD symptoms.

Answer to RQ6. There was not any association between education and PTSD symptoms.

Transition to Discussion

In this section the results of the study have been analyzed and concluded to determine whether there is an association and not causation between PTSD symptoms and IPV. The study analysis and results sections revealed that there is an association between PTSD symptoms and IPV. In the following section I will interpret the results of this study and suggest ways to apply the findings to the community and develop, plan, and implement social change regarding IPV and PTSD symptoms among the targeted group.

Section 4 – Application to Professional Practice and Implications for Social Change

Introduction

The purpose of the study was to explore, explain, and gain an understanding of a possible association between PTSD symptoms and college aged women who have experienced IPV. The study focused on three symptoms of PTSD and whether or not they were linked to IPV victims, which could suggest that IPV does play a role in PTSD symptoms developing. I found that the demographical data used for as predicting factors which were age, ethnicity, social support, and education were not associated with PTSD symptoms among the women. Research did show that there was a significant association between socioeconomic status and the development of PTSD symptoms.

In the first sections I will provide an overview of the interpretation of the findings, comparison of findings to peer reviewed articles, data analysis, and interpretation of the findings in context to the theoretical framework; I will also address limitations of the study, focusing on validity, reliability, and trustworthiness of the secondary data; Finally, I will focus on recommendations for further research, and limitations of current study; Fourth- implications for professional practice and social change, and lastly will be the conclusion of the study.

Interpretations of the Findings

The finding of the study helped to extend the knowledge regarding IPV and PTSD symptoms among college aged women who have experienced IPV. According to Kamimura, Nourian, Assanik, & Fraschek-Roa, (2016), college aged women who had

been victimized could potentially develop mental health issues related to the traumatic experiences of partner violence. Prior to their study, there was no investigation into this issue. The finding of this study has indicated that there is an association of college-aged women who have experienced IPV and PTSD symptoms. This study does indicate the need for further research to be conducted specifically to PTSD, depression, and personality disorder as related women and violence. The data set used for this study only supplied information related to PTSD symptoms. There have been not other studies conducted as of yet that argue the findings of this study.

Hirth & Berenson (2012), indicated that African American women experienced depressive episodes more so than Caucasian women who experienced the same trauma. According to the results of my study, Caucasian women were more affected with PTSD symptoms than any other race. Hirth & Berenson (2012) also discussed more research should be conducted to determine if those women who identified could suffer from PTSD. Hirth & Brenson (2012) also concluded that race played a factor in depressive type symptoms; however my study concludes that there was no association with race and PTSD symptoms from the participants who had experienced IPV. Dillon, Hussain, Loxton, & Rathman (2012), review of 75 studies discussing IPV on both men and women indicated that a correlation was found in both men and women who experienced IPV and altered mental status. Though the literature in these three peer-reviewed articles bares some similarities in their findings, they all discuss the need for extended research to be completed on the mental affects of IPV victims. The findings in this study did not

confirm the same findings in Hirth & Berenson's (2012), study, but shared some commonality with some of the findings conducted by Dillon, Hussain, Loxton, & Rathman (2012).

Analyze/Interpret Findings in Context of Theoretical Framework

The Socio-Ecological Model was the selected Theoretical Framework for this study. The Socio-Ecological Model was selected for this study to assist in determining if personal factors such as; age, ethnicity, education, social support, and socio-economic status contributed to IPV victimization or not and whether or not PTSD symptoms occurred. The socio-eological model helps to gain a better understanding pertaining to those factors.

The model focuses on four levels, which include: individual level, relationship level, community level, and the societal level. For the findings of this study, we can see that with the individual level that the personal factors such as age, education, income, ethnicity, and social support was reviewed and used to determine association between those factors and experiences related to IPV. Of those results, socio-economic status was the only factor that proved that women who had experienced IPV and had lower SES were more likely affected by PTSD symptoms. The other factors such as age, ethnicity, education, and social support had no linkage to the PTSD symptoms among those who had experienced IPV. The relationship level of the model focuses on the social aspect and support for those women who experience violence may or may not receive. As it relates to this study social support was not associated with PTSD symptoms for those who

experienced IPV, therefore it is unknown if the relationships with family and friends increases the risk for these women to become victims as it relates to relationships. The community level and societal level both deal with the support of community and advocacy. Since many of the women who did experience IPV lacked this type of support, it is hard to say if support from either area would have been helpful. Overall, according to Lawson (2012), the Socio-Ecological Model helps to determine the relationship for various environmental influences an individual encounters and how it affects behavior as it relates to IPV. Overall, the model focuses on how to prevent these acts of violence from happening at all four levels, which can be seen in this study.

Limitations of the Study

There are several factors that may have limited the study, which provides the need for additional research among this target group. One of the limiting factors of this study is the missing data from unanswered or skipped questions. Meaning, that during the selection process there were many participants who did not answer some of the questions, therefore causing the sample size for each group to be smaller than projected along with many questions unanswered. Though, the sample size was reduced, the sample size was still sufficient to detect an effect. The women of both groups whom both had experienced emotional sabotage/not experienced emotional sabotage were not asked about a diagnosis of PTSD specifically; but only about their mental state after the violence had occurred. Therefore, the study merely puts focus on the symptoms and not a diagnosis of PTSD itself due to the nature of the questions. Therefore, further research should be conducted

on the same or similar population but put more focus on actual PTSD diagnosis. The results of this study cannot be used to determine causation of PTSD symptoms but only association.

The data was retrieved from a very large secondary data set; therefore the validity of the data used in this study could be considered trustworthy. The secondary data set that was used contained over 20,000 variables and accessing the data was very time consuming and at times difficult to open all at one time. However, once the data was sorted through it was easy to analyze. The original sample size of the population was over 18,000 participants consumed of both males and females. The females in the original data set made up approximately 9,086 of the participants in the study that all ranged from age 18-70+, some who had experienced IPV and some who did not. However, for my research study, the sample size was much smaller due to the participants not meeting the set criteria. The two groups that were used in this study was a total of 199 randomly selected participants who met criteria. Although the study resulted in a reduced sample size, it was still sufficient to detect an effect.

An additional factor that may have caused some limitation to the study is the lack of social support that was or provided to the participants. Though the study indicated that many of the participants did not seek social support, it was available through various sources, but was not sought. Social support of family, friends, counselors, or community organizations could possibly reduce the PTSD symptoms. The support was there but not explored by either group of participants.

A final limitation that could have affected the quality of the study is the use of gathering information via phone in comparison to face to face data collection. Participants were surveyed either via landline or cell phone. The researchers had the inability to determine a true assessment as to whether or not the woman was being truthful or was just completing the survey over the phone for monetary gain. If the information had been gathered in person, maybe more questions could have been answered and more reliable data could have been gathered.

Recommendations

Future research related to this topic should focus more on PTSD diagnosis or other diagnosed mental disorders that may have resulted due to IPV trauma related experience. Since my research suggests an association between IPV and PTSD symptoms, then further research should be conducted to determine if prevention programs could deter women from low SES to be victimized. Women of higher SES who seemed to have more education, encountered little to no violence as it related to IPV in my sample. Furthermore, high school and community organizations should develop and implement more prevention programs targeting young women, so they are aware of what IPV is and how to obtain help. The programs should use the Socio-Ecological model teach prevention on every social level, so prevention can be discussed from every level in which IPV can appear in the females life. Future research on this topic should be encouraged to focus on not only 18-24yr olds, but maybe 15-17yrs olds and even 24-30yr olds to determine if other social factors may affect each age group differently.

Implications for Professional Practice and Social Change

The final results of this study indicated that there is an association between IPV and PTSD symptoms among women who had experienced IPV. There was also an association between SES of women who have experienced PTSD symptoms as a result of IPV. However, there was no association between age, ethnicity, education, and social support. However, the research had implied that PTSD symptoms were associated with the amount of emotional sabotage the woman has endured.

The potentiel positive social change impact of this study may include the improvement of prévention program and victim advocacy programs. These programs can teach women about IPV and provide them with resources to assist them with their situation. Prevention should be taught on an individual level, realtionship level, community level, and societal level to help decrease IPV ocurrences. Based on the findings of this study, each level plays a role in the females attitude, behaviors, and social norms as it relates to IPV. By focusing on each of those factors, counselors, educators, and advocates may be able to better in assist in prevention methods. PTSD symptoms has an affect on the victims daily, due the trauma they suffered as a result of violence ; henceforth is a public health issue that needs more research and more solutions.

Conclusion

In conclusion the study revealed that women who developed PTSD symptoms had experienced emotional sabotage (coercive, pyschological, and physical incidents) more frequently than women who had not developed PTSD symptoms. Results revealed

that there was clear distinction between the women who experienced emotional sabotage and those who did not experience emotional sabotage. The women that experienced emotional sabotage were more likely to develop PTSD symptoms compared to those who had not experienced emotional sabotage. The study has shown that there was an association between women of lower SES and PTSD symptoms as a result of experiencing IPV. The study also revealed that age, ethnicity, education, and social support had no significance with PTSD symptoms as a result of IPV. Women who experience IPV trauma and have low SES are at increased odds of developing PTSD symptoms than women who do not experience this type of trauma in their life.

References

American Psychological Association. (2017). Socioeconomic Status. Retrieved from http://www.apa.org/topics/socioeconomic-status/

Barringer, A., Hunter, B. A., Salina, D. D., & Jason, L. A. (2016). Empowerment and Social Support: Implications for Practice and Programming Among Minority Women with Substance Abuse and Criminal Justice Histories. *Journal of Behavioral Health Services & Research*. *43*(129), 1-13. doi:10.1007/s11414-016-9499-6

Baum, K. (2005). *Violent Victimization of College Students, 1995-2002*. Retrieved from US Department of Justice website: https://bjs.gov/content/pub/pdf/vvcs02.pdf

Breiding, M., Smith, S., Basile, K., Walters, M., Chen, J., & Merrick, M. (2015). Prevalence and Characteristics of Sexual Violence, Stalking, and Intimate Partner Violence Victimization—National Intimate Partner and Sexual Violence Survey, United States, 2011.*American Journal of Public Health*, *105*(4), e11-e12. doi:10.2105/ajph.2015.302634

Bureau of Justice Statistics. (2015). *Violent Crime Rate Remained Unchanged While Property Crime Rate Declined in 2014*. Retrieved from http://HTTP://WWW.BJS.GOV/

Business Dictionary. (2017). What are demographic factors? definition and meaning - BusinessDictionary.com. Retrieved from http://www.businessdictionary.com/definition/demographic-factors.html

Campbell, J. C. (2002). Health consequences of intimate partner violence. *The Lancet*, *359*(9314), 1331-1336.doi:10.1016/s0140-6736(02)08336-8

Centers for Disease Control and Prevention. (2015). Violence Prevention Basics: The Social-Ecological Model | Veto Violence.

Centers for Disease Control and Prevention. (2014). National Intimate Partner and Sexual Violence Survey (NISVS)|Funded Programs|ViolencePrevention|InjuryCenter|CDC. Retrieved from http://www.cdc.gov/violenceprevention/NISVS/index.html

Centers for Disease Control and Prevention. (2010). *NISVS: An Overview of 2010 Findings on Victimization by Sexual Orientation*. Retrieved from https://www.cdc.gov/violenceprevention/pdf/cdc_nisvs_victimization_final-a.pdf

Coker, A. L., Davis, K. E., Arias, I., Desai, S., Sanderson, M., Brandt, H. M., … Smith, P. H. (2002). Physical and mental health effects of intimate partner violence for men and women. *American Journal of Preventive Medicine*, *23*(4), 260-268. Retrieved from http://www.sciencedirect.com/science/article/pii/S0749379702005147

Coping skill | definition of coping skill by Medical dictionary. (2009). Retrieved from http://medical-dictionary.thefreedictionary.com/coping+skill

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed method approaches*. Thousand Oaks, CA: Sage Publications.

Dillon, G., Hussain, R., Loxton, D., &Rahman, S. (2012). Mental and physical health and intimate partner violence against women: a review of the literature. *International Journal of Family Medicine. 2013,1-15. Annual*. doi:10.1155/2013/313909

García-Moreno, C., &Riecher-Rössler, A. (2013).Violence against Women and Mental Health. *Key Issues in Mental Health, 178,* 167-174. doi:10.1159/000345276

Hirth, J. M., & Berenson, A. B. (2012). Racial/Ethnic Differences in Depressive Symptoms Among Young Women: The Role of Intimate Partner Violence, Trauma, and Posttraumatic Stress Disorder. *Journal of Women's Health*, *21*(9), 966-974.doi:10.1089/jwh.2011.3366

Kamimura, A., Nourian, M. M., Assasnik, N., &Franchek-Roa, K. (2016). Intimate partner violence-related experiences and mental health among college students in Japan, Singapore, South Korea and Taiwan. *International Journal of Social Psychiatry*, *62*(3), 262-270.doi:10.1177/0020764016629700

Kamimura, A., Nourian, M. M., Assasnik, N., &Franchek-Roa, K. (2016). Depression and intimate partner violence among college students in Iran. *Asian Journal of Psychiatry*, *23,* 51-55.doi:10.1016/j.ajp.2016.07.014

Kohr, R. L., & Games, P. L. (1974). Robustness of the analysis of variance, the Welch procedure, and a box procedure to heterogeneous variance. *Journal of Experimental Education*, 43, 1: 61-69.

Lawson, J. (2012). Sociological Theories of Intimate Partner Violence. *Journal of Human Behavior and Social Environment*, *22*, 272-590.doi:10.1080/10911359.2011.598748

Little, L., & Kaufman Kantor, G. (2002). Using Ecological Theory to Understand Intimate Partner Violence and Child Maltreatment. *Journal of Community Health Nursing*, *19*(3), 133-145.doi:10.1207/153276502760242332

Moeller-Saxone, K., Davis, E., Stewart, D. E., Diaz-Granados, N., &Herrman, H. (2014). Promoting resilience in adults with experience of intimate partner violence or child Kamimura, A., Nourian, M. M., Assasnik, N., &Franchek-Roa, Kmaltreatment: a narrative synthesis of evidence across settings. *Journal of Public Health*, *37*(1), 125-137.doi:10.1093/pubmed/fdu030

Nabors, E. L., & Jasinski, J. L. (2009). Intimate Partner Violence Perpetration Among College Students: The Role of Gender Role and Gendered Violence Attitudes. *Feminist Criminology*, *4*(1), 57-82.doi:10.1177/1557085108325235

Nabors, E. L., Dietz, T. L., & Jasinski, J. L. (2006). Domestic Violence Beliefs and Perceptions Among College Students. *Violence and Victims*, *21*(6), 779-795.doi:10.1891/0886-6708.21.6.779

National Coalition Against Domestic Violence. (2015). Statistics. Retrieved from http://ncadv.org/learn-more/statistics

National Institute of Health.(2016, February).Post-Traumatic Stress Disorder.

National Heart, Blood , and Lungs Institute. (2013, August 5). How Do Clinical Trials Protect Participants? - NHLBI, NIH. Retrieved from https://www.nhlbi.nih.gov/studies/clinicaltrials/protect

National Institute of Mental Health. (2016). *NIMH » Post-Traumatic Stress Disorder*. Retrieved from NIMH website: https://www.nimh.nih.gov/health/topics/post-traumatic-stress-disorder-ptsd/index.shtml

Noland, V. J., Liller, K. D., McDermott, R. J., Coulter, M. L., & Stephanie, A. E. (2004). Is Adolescent Sibling Violence a Precursor to College Dating Violence? *American Journal of Health Behavior*, *28*(1).doi:10.5993/ajhb.28.s1.3

Pezzullo, J. C. (2013). *Biostatistics for dummies*. Hoboken, NJ: Wiley.

Rodriguez, M. A., Heilemann, M. V., Fielder, E., Ang, A., Nevarez, F.,& Mangio (2008). Intimate Partner Violence, Depression, and PTSD Among Pregnant Latina Women. *The Annals of Family Medicine, 6*(1), 44-52.doi:10.1370/afm.743

Salcioglu, E., Urhan, S., Pirinccioglu, T., &Aydin, S. (2017). Anticipatory fear and helplessness Predict PTSD and depression in domestic violence survivors. *Psychological Trauma: Theory, Research, Practice, and Policy, 9*(1), 117-125.doi:10.1037/tra0000200

Seeman, T. (2008). *MacArthur SES & Health Network Research*. Retrieved from http://www.macses.ucsf.edu/research/psychosocial/socsupp.php

Siegel, S., & Castellan, Jr., N. J. (1988). *Nonparametric statistics for the behavioral sciences.* 2nd ed. New York NY: McGraw-Hill.

Tjaden, P., & Thoennes, N. (2000). Extent, nature, and consequences of intimate partner violence. *PsycEXTRA Dataset*. doi:10.1037/e300342003-001

US Department of Commerce. (2017). Race and Ethnicity. Retrieved from : https://www.census.gov/mso/www/training/pdf/race-ethnicity-onepager.pdfRACE

Vagi, K. J., O'Malley Olsen, E., Basile, K. C., &Vivolo-Kantor, A. M. (2015). Teen Dating Violence (Physical and Sexual) Among US High School Students. *JAMA Pediatrics*, *169*(5), 474. doi:10.1001/jamapediatrics.2014.3577

Vera, R. (2013). Perceptions and Experiences of Intimate Partner Violence Among Hispanic College Students. Doctoral Dissertation, 1-98. Retrieved from www.digitalcommons.u.edu/etd/1172